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Railway Trade Union Policy

THE claim of the National Union of Railwaymen for wage increases for lower paid workers, including a £5 weekly minimum wage, was rejected on April 14 at the Railway Staff National Council. Now the N.U.R. is seeking a meeting with Sir Eustace Missenden, Chairman of the Railway Executive, on the ground of "changed circumstances" since April 14. The circumstances are believed to be the increased freight charges. Meanwhile the Railway Clerks' Association has refused to support the N.U.R. claim. At the annual conference of the R.C.A. this week its President, Alderman Percy Morris, M.P., said that the clerks' case would not be met by a £5 minimum wage, and called for a complete revision of the financial structures of British Railways, because "too great a financial burden has been imposed upon the railways"; "railwaymen," he states, "are not going to continue . . . subsidising other industries and finding £24 million per annum for stockholders by maintaining uneconomic rates and low wages." Nevertheless, he is in favour of the policy recommended by the T.U.C. The Associated Society of Locomotive Engineers & Firemen also has been in favour of restraint. But even if no immediate pressure for wage increases is to be exercised by two of the three

railway unions, wage restraint, except amongst the most temperate of trades unionists, is losing whatever popularity it had, and largely as the result of rising prices. An example of the more extremist viewpoint is given by Mr. Figgins, General Secretary of the N.U.R., whose remarks were the subject of editorial comment last week. In appealing to the Railway Executive, in the current issue of *The Railway Review*, to abandon its "outmoded policy" and to realise that the only way to achieve efficiency on the railways is to attract and retain reliable staff at a reasonable wage, he is appealing to his own followers by specious argument and doing little more than maintain pressure amongst them for wage increases. The "arbitration or strike" ballot of the Confederation of Shipbuilding & Engineering Unions regarding its rejected £1 a week claim will shortly give some indication of the self-restraint, or lack of it, which the unions are able to exercise.

Railway Freight Charges

TRANSPORT administrations throughout the British Isles, and, indeed, in many parts of the world, are engaged in attempting to solve the problem of effecting a readjustment in railway freight charges which will result in producing an economic service. The proposed basis of charging which the British Transport Commission has evolved is now under discussion with trading interests, and these talks seem likely to be protracted. There can be no finality until the Transport Tribunal has sanctioned, either with or without amendment, whatever charges scheme the B.T.C. ultimately submits to it. Elsewhere in this issue, Mr. Edmond A. Grace, an accountant who has studied the charges systems of various transport organisations both here and abroad, puts forward some proposals for a basis of freight charging. His plan envisages the continuation of the existing railway rates structure, but the provision at the traders' option of a series of standard contracts at predetermined fixed and published rates, based on long-term road factors.

Lower Claims Against British Railways

LAST year showed a notable reduction in the amount paid out by British Railways in respect of claims. There were more than 1,000,000 of them in 1948, costing £4 million, whereas last year their number was reduced to 981,000 and their cost to £2½ million. This reduction was brought about mainly by an extension of security schemes. Further facts are brought to light in the May issue of the *British Railways Magazine* in which a tribute is paid to the staff for their help in lessening this burden on railway finances. Police records show many cases where prompt action by railway staff has led to arrests. However, the fact remains that, despite the strenuous efforts now being made, the sum of £2½ million paid in claims last year represents a serious loss which the railways can ill afford. The major payments made were for merchandise lost, stolen, or pilfered, which represented 60 per cent. of the total money paid out last year. Measures adopted by the Railway Executive are being intensified, and the article expresses the hope that those who consign traffic by rail will realise that they too are frequently to blame. Some packages are so badly packed as to invite trouble.

British Transport Commission Police

MR. G. C. HONEYMAN, who was appointed by the Minister of Labour as Independent Chairman to adjudicate on the claim of the British Transport Commission Police Federation for improved rates of pay and conditions of service, has now published his findings, details of which appear elsewhere in this issue. The basis of the Federation claim was an analogy of the duties of the B.T.C. police with those of the civil police. Besides advocating improved rates of pay based on the Oaksey Report it sought civil police conditions and also railway conditions where these were more favourable. Mr. Honeyman decided that there was insufficient substance in the analogy to justify the B.T.C. police staff having similar

status to civil police. In this he concurs with Sir Harold Morris, who, in 1943, rejected a similar claim of the railway police. The majority (96 per cent.) of the police affected by the present claim are employed by the Railway Executive; for these the award maintains generally the *status quo* in pay. For the remainder, employed by the London Transport and Docks & Inland Waterways Executives, increases will bring the existing rates up to those of the Railway Executive police. Conditions of service of the police in the two Executives have hitherto differed, but both sides agreed on uniformity, and the award has been made with this end in view.

Institution of Locomotive Engineers' Summer Meeting

A VERY successful summer meeting of the Institution of Locomotive Engineers was held on May 12, when the President of the Institution, Mr. W. Cyril Williams, with 268 members and guests, visited the Swindon locomotive shops of the Western Region, by invitation of the Railway Executive. The visitors were conveyed from Paddington to Swindon by special train and on arrival inspected the British Railways first gas-turbine locomotive, No. 18000, described and illustrated in our May 5 issue. Later they made a conducted tour of the various shops, with guides provided by Mr. K. J. Cook, Mechanical & Electrical Engineer, Western Region. Mr. R. A. Riddles, Member for Mechanical Engineering, Railway Executive, and President-Elect of the Institution, and Sir William Stanier were among those present at the meeting, as well as members of the Railway Executive, representatives of home and overseas railways, and a number of important industrial undertakings.

Crewe Dinner

IN our March 31 issue, the discontinuance since 1939 of the annual dinner of Past and Present Crewe Pupils and Premiums, was regretted and it was suggested that a revival of these functions would be popular with many engineers and others. The 49th annual dinner was held on May 5, 1939, and the present year would seem to be a favourable opportunity for holding the 50th gathering. A number of well-known ex-Crewe men have expressed interest in the possibility of reviving the dinner, provided that there was some assurance of a reasonable number attending. Mr. Eric A. Robinson, Managing Director of the Superheater Co. Ltd., 53, Haymarket, London, S.W.1, would be pleased to hear from those who may be interested in the revival of the dinner. He is already in touch with some of those who would welcome and support a re-union of ex-Crewe men and there seems little doubt that a satisfactory nucleus for a dinner will be formed.

Progress in Rail Welding

RAIL welding is making considerable progress in the U.S.A. One of the most adventurous railways in this connection is the Elgin, Joliet & Eastern, which is a belt line 238 miles in length handling heavy freight round the south of Chicago, and which plans eventually to weld the whole of its main-line trackage. Since 1943 this railway has completed 58 miles of rail-joint elimination and has one stretch of rail 12,782 ft. in length in the open welded in one continuous length. The lead was taken in the U.S.A. by the Central Railroad of Georgia with welding through two tunnels in Alabama in 1930; the Delaware & Hudson Railroad did pioneer work on track welding in the open between 1933 and 1939 and dealt with 42 miles of line in this way. A more recent fillip to welding was given in 1938, when the oxyacetylene pressure welding process known as Oxweld was brought in. In six years from 1938 to 1944 the failure rate with joints welded by the Oxweld process has been 0.14 per cent. The E. J. & E. states that, although it costs \$1,000 a mile more to lay welded rail than unwelded rail, saving in maintenance averages \$390 per mile annually, and the welding pays for itself in less than three years.

The American Strike

FOUR of the major railways of the United States—the Pennsylvania, New York Central, Santa Fe, and Southern—were concerned in the strike of diesel locomotive men which, as reported in our overseas columns this week, was called by the Brotherhood of Locomotive Firemen & Enginemen on May 10, and was settled on May 16. The stoppage arose from a demand for the employment of a third man on main-line diesel locomotives which had already been rejected by government committees. The first two systems were affected in part—west of Harrisburg and west of Buffalo respectively—but indirectly the strike affected traffic on thousands of miles of other lines and seriously hindered the nation's business. As pointed out in an editorial on the averting of a similar strike in our November 18, 1949, issue, the unions could not prove that the occasional need for the diesel assistant to leave the cab of the locomotive to perform duties in the engine compartment sufficiently justified the employment of a third man, to remain always with the driver.

Effect of the Strike on Industry

THE United States Government is empowered by a law of 1917 to take over the railways in the event of a national railway strike in wartime. As the country is technically still at war, the unions confined their action to four railways, to prevent such a move by the State. Negotiations between the union, the companies, and federal mediators at first failed to bring about a settlement, but the union eventually "modified" its principal demand for an additional man and the owners agreed to submit the other issues to arbitration. Many coal-mines in Pennsylvania and Indiana had to close because of lack of wagons and thousands of miners were made idle. The Pennsylvania Railroad itself laid off 85,000 employees stationed on the diesel-operated sections of the system. Other related industries ceased or reduced production. Several incidents of diesel-hauled trains, manned by scratch crews, being fired on, stoned, or derailed, were reported. The strike was the worst on the United States railways since 1946, when 250,000 locomotive drivers and train crews came out for two days to press a claim for a wage increase.

Unusual Views on Electrification

IN an editorial note in our April 14 issue we referred to the fact that on the 50-mile electrified mountain section of the Norfolk & Western Railway main line all traffic except coal is steam hauled; also, that it is uncertain whether electric traction is to be retained or abandoned. Despite the heavy initial cost that must have been involved in equipment for electrification, electric operation of passenger and merchandise traffic is evidently not considered worth while, and even for coal traffic it would not seem to be an unmixed blessing. No doubt the very efficient standard now reached in steam operation by the N. & W.R., with the availability of coal on the spot, has been responsible for this indecision even where heavy traffic is involved. In other countries, where more or less similar conditions exist, there appears to be no such uncertainty and electrification is being installed or extended as rapidly as possible. Perhaps in these cases there is no hope of attaining a similar standard of motive-power efficiency with steam traction due to operating conditions.

Electric Rolling Stock for Portugal

ELECTRIC rolling stock ordered by the Sociedade Estoril, Portugal, from the General Electric Co. Ltd., to which we referred in an editorial note in our issue of March 3, has recently been completed. The order includes a mixed-traffic locomotive and two first and second class motor coaches and two second class and three third class trailers. The motor coaches seat 20 passengers in the first class and 40 in the second and the trailers will seat 65 in the second class compartment and 75 in the third class. Additional seating accommodation has been provided by tip-up seats in all

coaches so designed that they lie flat against the partitions when not in use. The whole of the electrical equipment has been supplied by the General Electric Co. Ltd., while the bodies, underframes, bogies, and other mechanical equipment have been manufactured by Cravens Carriage & Wagon Co. Ltd., Sheffield. The mixed-traffic locomotive being built by the North British Locomotive Co. Ltd. is nearing completion. The coaches will be transported by road to Manchester for shipment to Lisbon. Further particulars are given elsewhere in this issue.

London Fares Hearing

IN our news pages this week we continue our summary of the proceedings before the Transport Tribunal in the matter of the draft London Area (Interim) Passenger Charges Scheme which the British Transport Commission is seeking authority to introduce on October 1. The estimated net result of the proposed fare revisions would be to increase the gross transport receipts in the London area from £74½ million to about £77½ million in a full year. On the opening day of the inquiry on May 9 it was shown that this £3·2 million increase in revenue would be lower by £1,250,000 as a result of the higher duty on oil and petrol. Since then, as was announced on May 15, there has been an increase in the price of coal as a result of the increase in freight charges, which will impose a further burden on the railways and be a handicap to industries seeking to extend their markets abroad. Though the National Coal Board has decided to pass on to consumers the effect of higher charges made by a fellow State enterprise, the steel industry evidently believes itself to be sufficiently flexible and efficient to be able to absorb the impact of higher transport costs.

Mr. A. B. B. Valentine, Member, London Transport Executive, concluded his evidence before the Tribunal this week, and gave a clear explanation of the fare anomalies now existing in the London area, emphasising the illogical discrimination between the different groups of passengers and also the "insistent public demands for the removal of inequalities in charges for comparable journeys." Mr. R. H. Wilson, Comptroller, British Transport Commission, giving evidence on Tuesday, said that the gross receipts of British Railways fell from £344·8 million in 1948 to £334·1 million in 1949.

A great deal of evidence remains to be heard. There have been notices of objection from 109 organisations and the inquiry is expected to last more than a month. The procedure of public inquiry laid down for railways and similarly statutorily controlled transport is in marked contrast to the position of the road hauliers, which, when additional operating costs have to be met, have merely to issue a statement that these costs must be passed on in the form of higher charges.

Road Haulage Executive Progress

THE Road Haulage Executive has now reached a period of consolidation in its organisation. The process of acquisition required under the Transport Act, 1947, is now virtually completed and steps are being taken by the Executive to carry a stage further the more general objectives of that measure. As might be expected, in view of the relative newness of the establishment of the set-up in many of the areas, some are operating better than others, but Major-General G. N. Russell, Chairman of the Executive, has expressed himself as being satisfied with the way in which the organisation is getting under way. It is recognised that there are still difficulties to be overcome, such as in some cases the securing of suitable premises, but these must be regarded as transitory.

An investigation has been conducted into the general efficiency of some of the road haulage groups, and as a result improvements have been made. The Chairman himself is continually impressing on his officers the need to avoid the creation of too much "paper" at all levels and is known to be anxious to ensure that both the staff

and the fleet of the Executive do not become inflated. In fact, there has been no overall increase in the fleet of vehicles engaged in road haulage and controlled by the Executive. The tendency is rather to the contrary. Any new vehicles required are being used for replacement purposes, and General Russell holds the view that a material reduction in the total number of vehicles being operated should be possible as a result of the better user being obtained.

The Road Haulage Executive is maintaining constant contact with the Railway Executive at all levels with a view to effecting as wide a measure of co-ordination of service as is practicable in present conditions. It is believed that considerable economies, on a long-term basis, may be achieved by common joint vehicle maintenance arrangements, and already common legal and advertising services have been brought into being. Road District Managers and Railway Goods Managers are in effective liaison. As a result of experiments carried out over a year with Carter Paterson parcels traffic, there has been a shifting of certain "smalls" from road to rail. On one or two trunk routes, such as London to Stockport, it has been found that this arrangement works well. Next morning delivery is achieved and pilferages and breakages have been negligible. There can be no doubt that an extension of this system in due course should eventually help to bring about that integration of service which is one of the primary objectives of the Transport Act.

The Road Haulage Executive has now set up negotiating machinery for dealing with staff matters and 200 district and group committees covering the whole country will have been elected by the end of June. Machinery for consultation between staff and management has also been brought into being and use will be made of the same committees for this purpose.

Economic Aspects of Electric Traction

SOME of the less familiar aspects of electric railway economics are given prominence in a paper* by Mr. J. C. Grant, an electrical engineer of the New Zealand Government Railways. The author first establishes a formula to find the point at which railway electrification becomes economic, as shown by an equation being reached between the charges and savings involved. This expression is then modified so as to be used for finding the maximum permissible capital cost of an electrification project, and in its revised form shows clearly the bearing of traffic density on economical operation. Traffic density being measured in gross ton-miles per track-mile per annum, it is possible for some main lines to carry higher densities than suburban routes because of the heavy loads conveyed by goods trains.

Further manipulation of the formula enables traffic density to be related to the price of coal and energy, and to labour conditions. From the equation in this form curves have been plotted to show the extent to which traffic must increase in order that electric operation may remain economic in the event of coal prices falling. One example given in the paper is a graph prepared by the Swiss Federal Railways, in which it is shown that a decrease of about 34 per cent. in the cost of coal would require a 40 per cent. increase in traffic to maintain the advantage of electric working.

These economic investigations show a remarkable constancy on railways all over the world in the ratio of electrical energy supplied to gross traffic hauled. The author illustrates with graphs and diagrams how different rates of acceleration and distances between stops affect the rate of consumption but not the total energy consumed. A train may be accelerated to a certain speed, which is then maintained for most of the run; or acceleration may continue to a higher speed, after which the train is allowed to coast. In both cases the total energy consumption is shown to be the same. Although gradients

* "The Importance of Traffic Data in the Economic Analysis of Railway Electrification Schemes," a paper presented to the Annual Conference of the New Zealand Institute of Electrical Engineers, February 14-18, 1950.

vary widely in different parts of the world, they are not considered to have the effect on total energy consumed that might be expected. They would do so if locomotives and motor coaches were made of sufficient capacity to negotiate up grades without reducing speed. In practice some speed reduction is accepted, and in general the consequent reduction in energy demand from the frictional and kinetic standpoints cancels almost entirely the increased demand resulting from the gradient. Apart from the economic objections to building motive power units capable of maintaining a constant speed irrespective of gradients, the author recalls that there would be an operating objection to their use, since heavy gradients often are associated with curvature that demands reduced speed.

In the final section of his paper the author draws attention to a relationship between the occupancy of a system and the voltage employed, as deduced from a study of existing railways. Examples are tabulated to show that as occupancy (train-miles per route-mile per annum) increases the tendency is to use a lower voltage, the extremes quoted being an occupancy of 10.2 million on the 16-kV. Stockholm-Gothenburg route, and 50 million on the Southern Region 660-V. system. It is suggested that the relatively high capital cost of the fixed installations on a low-voltage system demands continuous utilisation on economic grounds. With high-voltage systems more of the capital cost is represented by the motive power units themselves, which tend to become travelling substations and can be used efficiently on heavy trains operated at wide intervals. The author's general conclusion is, therefore, that while traffic density plays a great part in deciding whether electrification is economic, system occupancy so far has had a controlling influence on choice of voltage.

An American Survey of British Transport

ACTUATED by its faith in private enterprise America is keeping a close watch on the results of the socialistic policy pursued in Great Britain since 1945. An example of the care which is being taken to weigh up the position here is a survey of "Nationalised Transport Operations in Great Britain (first year, 1948)" made by the Bureau of Railway Economics, Association of American Railroads. In a pamphlet of some 50 pages, the first annual report of the British Transport Commission is analysed with scrupulous fairness, and the author quotes the comments passed in our September 9, 1949, issue on the changes in railway accounting procedure introduced by the B.T.C., including the change in the method of charging depreciation.

The survey reaches the conclusion that the first year of nationalisation "did not produce results too disheartening to those who believe in the socialist philosophy." The opinion is expressed, however, that "succeeding years will tell a much more significant story, as only under continued pressure of circumstances and experience can such a change be properly measured." The summing up ends with a reference to the proceedings before the Transport Tribunal over the proposal to increase freight rates, and the reproduction from our January 13 issue of the Commission's preliminary income account for 1949 compared with 1948, as submitted to the Tribunal.

In the review some striking comparisons are drawn between passenger and freight traffic characteristics in this country and in the States. In 1948 British Railways, serving a population only one third as great as that of the United States, transported half again as many passengers as did U.S.A. railways, but for only a third of the distance on an average. The U.S.A. railways, on the other hand, originated about five times the British Railways tonnage and worked nearly 27 times our ton-miles of service. While coal, coke, and minerals accounted for nearly 80 per cent. of the British Railways tonnage, products of mines were only 56 per cent. of the U.S.A. tonnage. These touches add to the interest of a thorough study of the B.T.C. report and of subsequent developments as far as these have been revealed.

Training for Engineering Management

THAT a discussion on education and training in engineering management is appropriate at the present time was the opinion expressed by Mr. H. G. Nelson, Deputy Managing Director, The English Electric Co. Ltd., in a paper presented at a meeting of the Education Group of the Institution of Mechanical Engineers on May 5. One of the greatest problems connected with the engineering industry in planning for the future is that of ensuring an adequate supply of reliable personnel both technically trained and skilled in the art of management. As industry becomes more complex, this problem increases, and all are aware of the great responsibility for the prosperity of this country which now rests on industry. The economic stability of the currency and of the whole life of the country is dependent on the successful balance of trade as between imports of raw materials and exports of manufactured goods. This second problem is widely realised, and success in meeting it is greatly dependent on industry obtaining an adequate volume of production from its resources of labour, skill, and plant, and on offering first-class products, both as to quality and technical performance, at competitive prices and delivery dates. To ensure this, industry must have efficient and capable management at all levels.

Today education in management is available through a number of sources. Many universities run lectures as part of their engineering courses which bring before their students the problems of management in the engineering industry as distinct from purely technical studies. General and specialised courses on management are available at technical colleges and elsewhere. Some are full-time courses to be taken as a part, or on completion, of a technical course, while others are part-time, either designed to be taken in conjunction with an engineering apprenticeship course or as further adult education. Some firms also arrange special management instruction as part of their own training schemes. Mr. Nelson said that this might prove valuable in bringing out the specialised requirements of a particular business and it would be interesting to hear of experience in the application of this type of instruction.

Referring to the practical side Mr. Nelson said that recognised apprenticeship courses are run by all large and reputable firms. The continued high standard of British craftsmanship was dependent on these courses, and efforts were being made through the Ministry of Labour, and through employers and trade unions, to raise the standard of apprenticeship training throughout the country, particularly in the large number of widely scattered smaller firms. Engineering apprenticeship training had attained a fairly high average level in Britain and steps were being taken further to raise this level. The period of apprenticeship was too short for the large amount of practical experience which must be gained, but time should be found during the more advanced course to give some experience of the organisational and functional side of industry; most courses arranged for this.

Providing experience after completion of apprenticeship is a more difficult problem. Many of the larger firms have arrangements whereby promising men with the right practical and educational background are moved from department to department to ensure that their early career gives the wide breadth of experience necessary for higher management. This can only be successful by a strong directive from the top to ensure that those responsible for selection have the necessary authority to pick suitable men from one department, where they are gaining experience and in consequence becoming really useful, and transfer them to another department where inevitably they must start from the bottom with little experience. Such schemes are well worth while and pay untold dividends in later years.

One of the basic requirements of management, said Mr. Nelson, was that of man management or leadership, including the ability to organise, delegate, and get the most out of human material. More advanced courses on management touched on this problem, but it had been

relatively little studied. The qualities of leadership, so essential in industry, form part of the fundamental make-up and background of each individual. Guidance from superiors is important, but is only effective when superiors themselves are fully competent in this field; this is not always the case. Qualities of leadership of the mass of workers requires an understanding of their outlook and background and of the procedure for collective bargaining.

Leadership of men of higher education and qualifications, often highly specialised in their own particular subjects, requires mutual respect, particularly when the co-ordination between technical, commercial and manufacturing experts is involved. An exchange of views on how the qualities of leadership can be enhanced would be most valuable. An ever present problem is that of launching young men into positions of responsibility even when they possess the necessary qualifications and the right training and background. This usually involves taking charge of men older than themselves, with more detailed experience or a high degree of skill, and such matters can be taken care of only by the management of each individual firm; there are, however, constant problems which must be associated with the background of management education.

In the past the senior and managerial officials of British industry have in many instances learnt their business as it has grown and have not had the facilities of highly developed courses in technology and other subjects available today. None can say that they are any the worse for that, but they have grown up with the development of industry, whereas the younger generation has now to take over industry as a going concern of considerable size and complexity. If it is to be immediately successful it must have an adequate background against which to fulfil its responsibility. This makes conscious planning for management education essential. Mr. Nelson asked whether there was not a danger that the provision of the excellent training schemes and courses now current might make it too easy to acquire superficial knowledge without the rough and tumble of experience to make it something worth while. Education must be only a stepping-stone to experience; the danger must not be overlooked that an over-emphasis on attendance courses and lectures might lead to over-confidence or to a sense of frustration if early promotion was not forthcoming.

Malayan Railway

IN his report for the year 1948 Mr. J. O. Sanders, General Manager of the Malayan Railway, announces a record revenue and completion of a large rehabilitation programme despite terrorism, which reduced passenger earnings even if it did not seriously curtail services. The many terrorist attacks included sabotage of bridges, track, signals, and telecommunications, firing on and derailment of trains, and destruction of wayside stations—all, fortunately, without serious passenger casualties, and with few amongst railwaymen. In the latter half of 1948, mail trains at night ran at reduced speeds, preceded by patrol trains, locomotives being armoured; the mail trains carried escorts and wireless sets in constant communication with fixed stations, and walkie-talkie sets were supplied to drivers; three armoured trains were put at the disposal of the security forces. The cost of security measures and of repairing terrorist damage was substantial. Operating expenditure rose by 23 per cent. and the cost of wages and salaries by 27 per cent. over 1947.

Passenger receipts were lowered by reluctance to travel during civil unrest; in addition, some first class traffic was diverted to the air, and lower class traffic to road services. The average fare per passenger journey rose from \$2.05, in 1947, to \$2.29, due to the fare increase in force from December 1, 1947. The weekly international service between Prai (Penang) and Bangkok ran throughout the year, but passengers were ferried across one river in Siam over which the bridge, destroyed during the war, had not been rebuilt; rehabilitation of the track made possible the acceleration of the Prai-Kuala Lumpur-Singapore mail

trains; the passenger service was restored on the Kuala Lumpur to Port Swettenham branch.

Goods (including livestock) receipts rose from \$11.97 per ton and 9.95 cents per ton-mile, in 1947, to \$12.34 and 10.14 cents respectively, due largely to importation of foodstuffs which were sent by rail to depots 30/70 miles from the ports and to continued expansion of the market for imported manufactured goods. Compared with the preceding year, rice and paddy tonnages rose 48 per cent., sugar 73 per cent., solid fuel 38 per cent., petroleum products 28 per cent., and tin 72 per cent.; against this, the tonnage of rubber fell 14 per cent., and those of general merchandise and agricultural products rose only 0.7 and 14 per cent. respectively. The general increase in tonnage over 1947 was 14 per cent.; the disproportionately greater increase of 18 per cent. in goods revenue was due to the rate increases in force from December, 1947.

The following are some of the more important figures:—

Railway	1947	1948
	(thousands)	
Coaching train mileage	1,056	1,184
Goods train mileage	1,426	1,683
Engine mileage	3,844	4,512
Passenger journeys	4,409	3,823
Tons of goods (incl. livestock) carried	1,389	1,589
	(£ thousands)	
Railway	(\$1.00 equals 2s. 4d.)	
Coaching traffic revenue	10,964	11,062
Goods traffic revenue	16,630	19,615
Total revenue	29,885	33,079
Working expenditure	24,084	29,516
Contribution to renewals fund	3,192	4,787
Wharves		
Revenue	2,435	3,116
Working expenditure	1,784	2,318
Contribution to renewals fund	129	194
Ferry Steamers		
Revenue	308	324
Working expenditure	321	411
Contribution to renewals fund	31	47

Despite the additional work of repairing locomotives and rolling stock damaged by sabotage, the Sentul works erected and put into service 20 diesel-electric shunting locomotives ordered from The English Electric Co. Ltd. and some 700 new wagons delivered by British builders. The output of repairs improved despite delays in delivery from Britain of spare parts. Progress was made in the restoration of the pre-war air-conditioned passenger vehicles. The equipment of the Sentul works generally was improved, a step forward in the restoration of this war-damaged plant to its pre-war capacity.

Route-mileage rose to 860 at the end of the year, as compared with 810 miles at the end of 1947, and 1,068 miles immediately before the Japanese invasion. Some nine miles of Japanese-built sidings were removed, and four miles of sidings relaid which had been removed by the Japanese. In Kelantan 17 miles of the East Coast line were restored, involving heavy bridging works such as the reconstruction of the Guillemard Bridge, the largest in Malaya. In Pahang some 32 miles of the East Coast Line were reopened, but work had to be suspended as the result of terrorist activities. Unusually heavy monsoon rains in Johore in January, 1948, caused much damage to the main-line track, with many bank and cutting slips and some flooding. Much work was done on the restoration of wharves and jetties at Port Swettenham.

The revised salaries recommended by the Malaya Public Services Salaries Commission of 1947 were introduced in August, 1948; the resultant annual increase in the cost of salaries was estimated to be \$2.9 million. Recruitment of labour, both skilled and unskilled, did not improve, and the number of employees was below requirements. Anti-malarial and other health measures were vigorously pursued by the railway's health department. Welfare work included continuance of staff canteens and food shops, and special rations of rice and sugar for heavy workers.

On January 1, 1948, a new Railway Ordinance came into force, replacing former railway enactments, and providing for incorporation of the Malayan Railway Administration and establishment of a Statutory Railway Board with the General Manager as Chairman; Members include the Financial Secretary, the Economic Secretary, and the Commissioner of Road Transport of the Federation of Malaya. The reconstituted board met for the first and second times in August and December, 1948.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

A New Transport Undertaking

May 3

SIR,—Under the heading of "Looking Ahead in Transport," the opinion was again expressed in your issue of April 28 that the railways with their considerable interest in other forms of transport might have formed a nucleus for nationalised transport in this country.

There would appear to be little ground for the contention that, if this had been done, the railways (which with their ancillary businesses have contributed nearly eighty per cent. of the assets of the Transport Commission) would stifle all but the primary section of their industry.

Before the introduction of the Transport Bill in 1946, I had visualised a nationalised transport undertaking composed of a Railways & Harbours Authority somewhat on the lines of the South African Railways Administration. A System Manager for each Railway System or Region responsible for all branches of transport within his Region would combine the desired integration with some measure of decentralisation. London Transport would have constituted a seventh, or Metropolitan Region. The effect of such a hypothetical organisation would be to give a greater supervisory control at a lower level, with a corresponding reduction in "high level" organisation.

Yours faithfully,

N. E. NORMAN

26, Ainsworth Avenue, Ovingdean

London and Bristol Services

May 4

SIR,—One cannot help being disappointed on glancing at the Paddington-Bristol services in the new Western Region Summer Timetable. Surely a few slight accelerations would have been possible. The 1.15 p.m. Paddington to Bristol and Weston-super-Mare could have been made to reach Bristol at least 7 min. earlier than its present public arrival time of 3.37 p.m. On numerous occasions I have seen it come almost to a standstill at South Wales Junction at 3.27 or 3.28 p.m., the 3.23 arrival from Weymouth being still at the platform. The main reason, I believe, for this 3.37 p.m. arrival is to avoid too tight a connection from Bath on to the 3.35 p.m. Bristol to Plymouth, nevertheless this "minus" connection can usually be made.

Similarly, in the up direction one would have thought that the very moderately loaded (sometimes only 9 bogies) 11.45 Bristol to Paddington *via* Badminton non-stop could have its 135 min. schedule for the 118-mile journey reduced at least to 130 min., especially when the 3.30 p.m. Paddington to Penzance can reach Taunton, 141 miles from Paddington, in 148 min. It is likely that schedules like the 11.45 a.m. Bristol make drivers more unenterprising than ever.

Yours truly,

R. M. PALMER

80, Longmead Avenue, Bristol, 7

Railway Efficiency

May 2

SIR,—When Mr. Frederick Smith drafted his letter in your April 28 issue, he might have saved himself the trouble of calculating the percentage difference between the American and British statistics of "net ton-miles per freight-train hour."

The two figures are not on the same basis. Our American friends use the short ton and include train shunting hours at stations in freight-train hours. Our statisticians wrestle with long tons and put the shunting time of train engines under shunting hours. Whatever method of computation is adopted, the unit output per hour of freight train operation will always be higher for the U.S.A. railways, because they

handle an immense traffic volume. The Pennsylvania Railroad alone works over its 10,000 route-miles at least twice the long ton-miles produced by British Railways from 19,600 route-miles.

American railwaymen keep freight train statistics separate from yard service records. They would be astonished if they read the statement by the Minister of Transport in the House on April 27 that improved railway efficiency "could best be seen in the increase in the number of ton-miles moved in an engine-hour from 461 in 1938 to 542 in 1948" and then were told that the figures did not represent the number of tons of freight carried in an hour by the average freight train. Presumably the Minister tried to turn the statistical jargon "net ton-miles per total engine hour" into plain English and failed to see that he was not stating the facts correctly.

However, statistical comparisons with pre-war years have little value, because things are not the same in the post-war period. While present conditions endure British Railways should improve their operating results year by year and increase "net ton-miles per train hour" steadily.

Yours faithfully,

R. BELL

Frogna, N.W.3

Short-Distance Electrification

May 4

SIR,—I notice that Sir Eustace Missenden has been advocating wholesale main-line electrification in Britain, but he does not say much about short-distance electrification in thickly-populated areas, which appears to me to be a much better economic proposition.

It cannot be disputed that suburban electrification in this country has resulted in greater efficiency and economy of working due to the rapid acceleration of electric trains and the short time needed for reversal at termini, but these factors are not so important in the operation of long-distance services, where such close timing is rarely required and there is usually opportunity to regain lost time.

I suggest that a start be made in Glasgow and Birmingham, where the concentration of population is great. In Glasgow, priority should be given to electrifying the underground lines of the former L.M.S.R. and L.N.E.R. In Birmingham, the New Street-Aston-Walsall line, as far as Perry Barr; the Handsworth Junction-Soho Junction loop, and the Soho Junction-New Street section, might be electrified, enabling a circle service to be operated to and from New Street. Later, this electrification might be extended to Wolverhampton and Dudley, or to Walsall.

Yours faithfully,

E. E. SMITH

Castle View, Stagshaw Road, Corbridge

Liverpool Street Station

May 6

SIR,—It would appear that the correspondent in your May 5 issue is not greatly familiar with Liverpool Street Station, and his observations must be based on a visit during a slack period. As your editorial footnote pointed out, the lines serving platforms 9 and 10 are in frequent use, with main-line trains often extending the full length of these platforms, with the locomotives right up to the buffer stops beneath the hotel. To regular users of the station, it is more the exception than the rule that both these platforms are unoccupied, and therefore the suggestion that a movable bridge be installed is out of the question.

With regard to the editorial suggestion that a subway might be constructed to obviate use of the footbridge, it is of interest to point out that a subway does exist as an alternative means of connection between the east and west sides. This is the subway to the Central Line station,

to which access is obtained by stairs on the east side concourse at platforms 18 and 11, and which comes up on the west side concourse opposite platforms 2 and 3. I would point out that to casual users of the station this is not known, as the subways indicate only the Central Line, and travellers must of necessity use the footbridge. There appears to be no reason why these subways should not display information that they give access to the other side of the station, and so save travellers any inconvenience by having to climb the flights of stairs to use the over-bridge, especially when carrying heavy luggage.

Yours faithfully,

J. F. BURRELL

5, Vernon Road, Seven Kings

[We should perhaps make it clear that what we suggested was an additional short subway between platforms 9 and 10 only, like that linking the departure platforms at Paddington.—Ed., R.G.]

Southport Electric Services

May 8

SIR,—The London Midland Region has surely been unenterprising with the Southport-Liverpool train service. Only one of the pre-war fast or semi-fast trains has been reinstated, and the only reminder of them is four morning trains which pass only three stations and one "express" from Hightown, reaching Liverpool too late to be of use to the majority of season ticket holders. There is, however, a generous provision of three "expresses" in the north-bound direction. It is certainly extraordinary that no use is made of the up fast line between Seaforth and Bank Hall for suburban services.

The withdrawal of the Southport-Crossens electric train service on Sundays, seems a pity, as your correspondent, Mr. Faulkner, says in his letter in your March 24 issue. It may be of interest to record that during the war years, a 20-min. service was maintained and it must have paid well, because there were no Sunday buses along the parallel route. I can only conclude that the train service was reduced and is now withdrawn because the Corporation now maintains a Sunday service. Even on weekdays the service is so infrequent and the fares so high that very few people travelled on this route, through a good suburban area.

Yours faithfully,

W. A. SHEPHERD

11c, Wynnstay Road, Armadale, Victoria

Wagon Turn-Round

April 10

SIR,—Mr. D. J. Worrall in your April 17 issue does not say on what experience he bases his assertion that "conditions overseas, and the conditions in this island, are so widely different as to defy comparison." The fact is that the transport of traffic from one town, or works to another, is the same in all countries! The trouble is that, while England still uses four or five small wagons, other countries use one large one.

By adopting the latter, shunting and light mileage (1,250,000,000 wagon miles a year) would be reduced by 75 per cent. At his own works, Mr. Worrall now uses locomotives and men who spend three-quarters of their time in avoidable shunting—to say nothing of the number of men engaged in the futile work of shovelling coal, iron ore, and so on, out of wagons. Recently, the coal and iron and steel trades were complaining at the Rates Tribunal of their heavy transport charges—which are several times as much per ton-mile as their foreign competitors—and now we have Mr. Worrall protesting against the introduction of those measures which would secure a substantial reduction of them!

As collieries and works have been compelled to overhaul their obsolete internal methods, they should now turn attention to their equally obsolete methods in transport. Mr. Worrall says that the dilapidated condition of sidings at some of these places is due to their having received little or no attention for upwards of 40 years, and that a reason-

able life may be expected by continuing to use existing types of wagons. What does he call a "reasonable life"? Does he think that rails, sleepers, and so on, should last for ever? The length of 40-ton wagons is less than half that of four ten-ton wagons (and they cost almost half as much). Thus, some of the sidings could be pulled up altogether, providing room to ease curves in the others.

My critics might also study the photographs in your April 7 issue of the 3-ft. 6-in. gauge Kenya & Uganda Section of the East African Railways (on which I have also had personal experience), and its trains of 40-ton bogie covered wagons, which should be in general use for the far greater traffic carried on the British railways. Ordinary open 40-ton wagons are only about half the height. The types now built for the 4-ft. 8½-in. gauge American and Canadian railways should be adopted in England.

Finally, the present proposal is to move gradually towards 16-ton wagons, but it is no good adopting this slow-motion business of occasionally increasing the size by a mere couple of tons. The responsible traffic officers of the railways, who, of all people, surely ought to know, have long since recommended the general introduction of 20-ton and 40-ton wagons, which would secure far greater economies than the estimated saving of only £3,000,000 a year. What the administrations want is to recapture the bold and enterprising spirit of the pioneers, who built up almost the whole of our railway system within about 50 years.

Yours faithfully,

E. R. B. ROBERTS

Eynesbury, St. Neots

Summer Train Services

May 4

SIR,—I was of the opinion that the article in the issue dated April 28 was too brief and uninformative until later I had a perusal of the timetables for the North Eastern and London Midland Regions. I now know the reason why! They make most depressing reading and, except for the withdrawal of the repair work on the East Coast route resulting from the storm damage, they might quite well have been printed a year ago.

Is it a Puckish sense of humour on the part of some clerk that shows the down "Scotsman" to arrive in Edinburgh Waverley at 5.54 p.m. and to arrive at 5.58 on Saturdays? Or the up "Royal Scot" which is shown to terminate its head-long flight at Euston at the romantic time of 6.13 p.m.?

No doubt also another of these minions got quite a kick out of the task of preparing the notes shown at pages 84-85 and elsewhere in the London Midland book. I suggest that the kick was misplaced and that the ordinary mortal by the time he consulted the tables and these voluminous notes—and got the correct ones—could have arrived at his destination more quickly on foot.

There has been a little progress in these last two years, principally on the Scottish Region. There we have bookings of 70 min. for the 66.9 miles, Symington to Carlisle: 78 min., 73.5 miles, Carstairs to Carlisle: 97 min., 89.8 miles, Perth to Aberdeen, and others, but what good is it when the time is frittered away on the remainder of the journey on the London Midland Region? On a recent trip on the 9.30 a.m. Glasgow to Birmingham, we duly completed the 73.5 miles from Carstairs to Carlisle in 77½ min. (75 min. net) but out of Carlisle it was difficult to believe it was the same engine and load. Never exceeding 45 m.p.h. between Carlisle and Shap, we passed Shap Summit in 58½ min. and as no energy was shown on the downhill stretches beyond, I imagined that some serious defect had occurred on the engine and expected we would be quietly refueled at Preston for the "Royal Scot" to pass. We passed through that station and it then dawned on me that our driver had been killing time to satisfy the pundits of the timetable. We completed the 141 miles from Carlisle to Crewe in the booked 195 min., when half-an-hour less would still have been generous.

Yours faithfully,

W. ROBERTSON

95, Albert Road, Glasgow, S.2

THE SCRAP HEAP

Deflation

A notice has been posted on Frankfurt railways forbidding passengers to explode toy balloons.—From the "News Chronicle."

Pen-Pushing Engine Drivers

The day of the schoolboy's ambition to become an engine driver is slowly disappearing into the past, for the work will soon have as little romance in the eyes of a youngster as that of a pen-pushing clerk. The Railway Executive recently examined a full size "mock-up" of the new standard engine, and I cannot imagine why a writing desk was not fitted in the cab.

I have before me a copy of form B.R. 87211 which is the nationalised driver's ticket. It is a formidable form compared with the simple scrap of paper which comprised the old ticket, and it is difficult to understand the reason for its existence unless it be some bureaucrat's love of statistics. Practically all the vital information required can be obtained from the guard's journal.

No wonder the 8.8 to Retford is nowadays delayed 24 minutes, while in the past, with a through carriage, from Worksop to London, there was a stop of only 5 min. The new ticket, with its heading spaces for region, date, depot, turn number, place of lodging, etc., continues after name of driver, fireman, pay bill numbers, bookings and details of reliefs, to details of engine number, depot number, description of trip, principal stations or

points where shunting or delay occurred, and so on and so on, with items at depot and facts away from depot. After all this, there is a special panel at the foot of this two-sided 12 in. by 10 in. sheet for remarks. I urge drivers to count 10 before filling in this panel.—From the "Workshop Guardian."

The Cushing Railway

Lieutenant (E.) R. A. Tracy, R.N., has sent us a cutting of an article by Mr. Alton H. Blackington on Joe Cushing's Railway, which recently appeared in *The Reader's Digest*. The article relates how Joe Cushing, who was born in New England, U.S.A., in 1817, built a 500-ft. long private railway between the Boston & Maine railway station at Fitchburg and his corn-grinding mills. After arranging an official opening, Cushing sent a number of travel passes to the Presidents of large American railways with a letter of invitation to travel on the line, and received similar facilities in return. The story continues:—

And then came the day!

Into the yard of J. Cushing & Co ("Flour & Grain") there stalked, one hot summer morning, an important-looking gentleman with striped pants, mutton-chop whiskers, gold-headed cane—and one of Joe's passes. He was the President of a big western railway who had been pleased to receive the superintendent's cordial letter.

Joe politely asked the stranger if he had time to ride over *all* the system.

The visitor pursed his lips and said, well, he had two days to spend. Whereupon Joe called to his assistant who was sorting grain bags on the platform: "Have the President's car made ready! And clear the track for a special run!"

A few minutes later, the dumbfounded visitor was personally assisted by Supt. Cushing on to a flag-festooned flatcar and seated in a broken-down barber's chair.

A yoke of long-horned oxen had been backed into place and chained to the flatcar. Joe gee'd the off ox, goaded the nigh one, and the Cushing Special, its sole passenger a goggle-eyed executive of one of the most important railways in America, went rolling off along the 500-ft. spur.

When they reached the end of the line Joe said sheepishly: "I hope you are not insulted by my little joke. I know this isn't much of a railway. But it's mine, and I'm proud of it."

"Insulted? I should say not! This is the best trick I ever heard of. Just wait till I get home and urge my railway friends to use their passes!"

Eden in Euston

Euston Station as described in *The London Journal*, 1850:—"This grand terminus... has been constructed on a scale of almost dazzling magnificence... In the centre is an elaborately-carved refreshment counter, laden with the most luxurious viands, the most sparkling wines and fruits, that would tempt another Eve to sin again.

"Behind this rich array are young ladies blooming with rosy health, and flitting to and fro like the attendant divinities of some paradise of the imagination. Approach to their vicinity is fatal both to hearts and pockets, so we would advise them to hasten on to the platform and take their fill of the wonders they will there see..."
From "Everybody's Weekly."

Filling the Dollar Gap

The Regional Treasurer, Glasgow, has received a dollar bill conscience money from an old lady in Washington, U.S.A., who was formerly resident in this country. The money appears to be a debt owed to the old North British Railway in 1893.—From the *Scottish Region Edition* of the "British Railways Magazine."

Tailpiece

You who are scheming, now spring days are beaming.

For days later on in your "annual splash";

Sitting and dreaming, and "tanning and creaming."

That on your return you can cut a fine dash;

Think just for a moment of those folk so able,

Who scheme and who plan for the Summer Timetable.

They work in connection with Rolling Stock Section—

You can't run a train if it just is not there—

And by their detection you get your connection

And all you need do is to just pay the fare;

With thousands of pins and string coloured and plain—

They plot out the path of each separate train.

Each twenty-four hours, there are papers and flowers,

And goods miscellaneous, specials, and milk.

But they in their powers, esconced in their bowers,

Arrange for swift passage as smoothly as silk;

So hats off, I say, to the Timetable Legion

Who plan all the trains in each separate Region.

A. E. C.



"Victoria Station—hell for leather!"

(Reproduced by permission of the proprietors of "Punch")

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Economy Measures

The railway economy campaign is producing satisfactory results. Committees have been established in all departments and the staff is co-operating. It is difficult to assess all the economies introduced in terms of money, but a statement covering the economy campaign up to the end of last year shows savings in recurring expenditure of approximately £606,280 a year; savings in non-recurring expenditure are estimated at £302,676. An important part of the economies effected is the recovery and return to the stores department of all surplus unused material, and used material capable of being repaired. The value of material thus recovered and sent back to the stores to the end of last year is estimated at £548,074.

In many directions, the effects of the campaign are only now becoming apparent, and in the past three months the tightening up of train services, the cancellation of unnecessary trains, especially during weekends, and the closing of stations on Sundays have made substantial contributions to economies in transport expenditure.

The services of no permanent or temporary employees have been terminated and their wages or salaries and other conditions of service are not being curtailed.

EAST AFRICA

Proposed Expenditure

Important recommendations submitted by the management, designed to improve efficiency, and involving expenditure of over £2,000,000 were considered at recent meetings of the Ports and Railways Committees and the Transport Advisory Council. Below are some of the main items of the proposed expenditure which was supported by Council and approved by the Commissioner for Transport:—

£1,085,000 for replacement of locomotives ;
£150,000 for new second class coaches ;
£47,000 for additional train working instruments ;
£88,000 for caboose coaches for train crews in Tanganyika ;
£112,000 for the renewal of road motor vehicles for road services in Tanganyika ;
£65,000 for regrading and realignment of track in the Nakuru district ;
£20,000 for additional staff housing in Nairobi ;
£25,000 for development of the inland port of Namasagali, the terminus of the railway on the Victoria Nile (for Lake Kioga) ;
£19,000 for mechanical handling equipment at various stations and lake ports ; and
£35,000 for improvements to water supplies on the main line and an additional crossing station near Nairobi.

In addition, a sum of £76,000 was earmarked for railway expansion in connection with the development of a new industrial area in Nairobi. The proposals for a major reorganisation of the Chief Engineer's Department, to enable the Department to cope adequately with the many schemes now in progress and projected as part of the rapid growth of the Colony, were also recommended and approved.

An expenditure of over £50,000 on improved port facilities, mainly at Tanganyika ports, was also accepted. This includes exploratory work in connection with new deep-water berths at Dar es Salaam and extra covered storage for exports at Dar es Salaam and Tanga.

Financial questions arising out of new roads of access to the railway, which have become necessary as a result of the recent realignment of the Nairobi-Nakuru section, were discussed, and the Council recommended payment of certain sums to the Kenya Government in settlement of the various claims.

E.A.R. & H. Administration Act

The Central Legislative Assembly debated the new East African Railways & Harbours Administration Act at its session in April. This Act has become necessary as a result of the amalgamation in May, 1948, of the Kenya & Uganda Railways & Harbours, and the Tanganyika Railways & Ports Services, and replaces provisional legislation.

The Act now finally combines the two transport systems into one organisation under single and unified legislation. Under the provisions of the Act all legal matters relating to the combined East African Railways & Harbours are now uniform in all the territories served.

CEYLON

Cheap Return Tickets

It has been decided to reintroduce cheap day return tickets which were popular before the war. Tickets will be available in all classes and the issue will be confined at present to principal stations from any station between 10 and 75 miles away at one-and-a-half the single fare. They will be available for return by any train starting before midnight the same day.

UNITED STATES

Strike of Diesel Enginemen

On May 10, the Brotherhood of Locomotive Firemen & Enginemen called a strike, affecting 18,000 men, in support of a reiterated demand for an extra fireman on multiple-unit diesel locomotives, which had already been rejected by Presidential fact-finding boards.

The systems directly affected were the Atchison Topeka & Santa Fe; the Southern; the New York Central west of Buffalo; and the Pennsylvania west of Harrisburg. The Pennsylvania Railway announced the same day that it would immediately lay off 85,000 of its 125,000 employees, and that by the next morning all operations west and north of Harrisburg, where the changeover from electric to diesel haulage is made, would cease.

Fourteen coal mines in Pennsylvania were forced to close because of lack of wagons, and 55,000 miners were re-

ported to be idle. Large mills and factories also had to close. The strike ended on May 16 when the Union withdrew its chief demand for an extra man and agreed that other claims should go to arbitration.

Regirding Ohio River Bridge

The Illinois Central Railroad has decided to replace the nine main spans of its Ohio River Bridge at Cairo. The existing spans are two 518-ft. and seven 400-ft. through Whipple truss structures, completed in 1889. The work is estimated at \$6,400,000.

The two 518-ft. spans, and four of the 400-ft. spans, are to be replaced by through Warren trusses of the same length, but the other three 400-ft. Whipples over shallower water are to be replaced by six 200-ft. deck-type Warren trusses, requiring the construction of three new piers.

As this bridge carries Gulf Mobile & Ohio as well as Illinois Central traffic the minimum interruption of services is essential. During the movement of each old and new span traffic will have to be diverted.

IRELAND

C.I.E. Strike Ended

As briefly recorded in our May 12 issue the strike of locomotive men of Coras Iompair Eireann was settled on May 4, after the acceptance of terms submitted by the union leaders to representatives of the 1,500 strikers. The strike began on April 29, when men at the Limerick Depot ceased work over a dispute regarding promotion.

It was expected that goods which had been accumulating in Dublin warehouses for despatch to country districts would be cleared within a few days.

WESTERN GERMANY

Electrification Programme

The revised electrification scheme was recently disclosed by the Federal Minister of Communications. Known as the Arnold Plan, because evolved by Herr Arnold, Minister of Communications in North Rhine-Westphalia, the new scheme is more comprehensive than the original plan, which restricted electrification to the Ruhr-Rhine region, as mentioned in our August 19, and December 9, 1949, issues. Some 600-700 route-miles were to be electrified within eight years.

This first stage was to be followed by electrification of lines of approach to the Ruhr-Rhine region, such as Aachen-Cologne, Koblenz-Bonn-Cologne, and Oberlahnstein-Troisdorf-Cologne.

The Arnold Plan extends electrification along the entire length of the two main lines skirting the Rhine and of other important lines, mainly in a north-south direction to link up with the electrified lines in Bavaria, Wurttemberg, and Baden. This will enhance

the importance of the north to south traffic route which has replaced the west to east route since the war as the chief traffic trend. This modification means that some lines in the Ruhr-Rhine region originally earmarked for conversion will retain steam traction for the time being; this, however, will gradually give way to diesel traction for passenger services until they too are electrified. The mileage to be electrified in the revised plan within eight years is about the same as before; but the capital expenditure is reduced from D.M. 600 to D.M. 570 million.

The province of North Rhine-Westphalia particularly will gain from the projected electrification. The suburban traffic of 15 cities in the Ruhr-Rhine region will be expanded; this will help

in the reconstruction of war-damaged areas, as it will allow decentralisation of urban populations.

Eighty per cent. of all expenditure in connection with the project will consist of wages paid to some 15,000 workers employed.

FRANCE

Restaurant Improvements

Travellers this year will find improved restaurant facilities placed at their disposal in at least sixty provincial station buffets by the National Railways. The S.N.C.F. has called on all the concessionnaires of its buffets and restaurants to organise special six-course meals, including regional specialities and a small carafe of wine,

for a fixed price of fr. 600-700 (12-14s.) service charges included.

Details of the new scheme are being organised by M. Abel Bouchereau, Chef des Services du Domaine. The menu will consist of four or five hors-d'oeuvre with butter, a fish or egg course or an entrée, meat or fowl, a vegetable or salad, cheese, fruit and a sweet dessert. Everything is being done to brighten the restaurants and make the decor attractive.

Artistic menu forms have been designed and some 500,000 printed. The new plan will be widely advertised, and lists of the stations where the special meals may be obtained will be distributed to travel agencies. Paris stations, however, are not included in the scheme.

Publications Received

Early British Railways, by Christian Barman. A King Penguin Book. West Drayton, Middlesex: Penguin Books. 7½ in. × 4½ in. 16 pp. Illustrated. Price 3s. net. In his latest book, Mr. Christian Barman, Publicity Officer, British Transport Commission, pays tribute not only to the planners and constructors of our railways—Stephenson, Brunel, Locke, and the rest of a remarkable band of pioneers—but also to their armies of navvies who often toiled in the harshest conditions. He laments the neglect of the study of railway works of art, shows us the architectural unity of the early railways, whose builders keenly felt under an obligation to rise to the occasion, and in "this new idiom of monumental engineering" finds a recognisable "Stephenson School." He advances the interesting theory that Stephenson's work may well have been influenced by the form of the great mansion built by Vanbrugh at Seaton Delaval, not far from Killingworth. Anecdotes and quotations intersperse Mr. Barman's own choice prose; they include the closing lines of a poem by Wordsworth, composed when contemplating a new viaduct, and more laudatory than might be expected from the poet who was later to fear that no nook was secure from rash assault" (Incidentally, the complete poem prefaced Volume I of our predecessor, *The Railway Times*, in 1838). There are 16 colour plates, from aquatints, lithographs, and drawings, of typical achievements of the early railway age.

Grosstädte Verkehrsprobleme (Transport Problems of Large Cities). By Dr. Erich Möller, Hamburg. Hammonia Norddeutsche Verlagsgesellschaft. 10½ in. × 7½ in. 168 pp. Price DM. 22. The author outlines some urban traffic and transport problems, with special reference to Hamburg and with particular emphasis on rail-bound traffic. Without pretensions to comprehensiveness, this book ranges over many subjects, some of which are given more elaborate treatment. An historical survey of the development of urban traffic in some of the largest towns in the world

is followed by a chapter headed "Urban Traffic Problems in General," though concerned chiefly with economic aspects; of special interest is a detailed analysis of costs and fares. The second half of the book is almost exclusively devoted to Hamburg, which, owing to the great variety of transport in the city and its environs, offers much to students. Much German, though hardly any foreign, literature is referred to in footnotes and listed in an extensive bibliography. The maps and diagrams will be found particularly useful.

Railway Track: Design, Construction, Maintenance, and Renewal of Permanent Way, with notes on Signalling and Bridge Maintenance. By K. F. Antia. Second edition. Bombay: New Book Co. Ltd., 188/190, Hornby Road. 9 in. × 5½ in. 416 pp. Illustrated. No price stated.—On page 262 in our March 8, 1946, issue, we reviewed the first edition of this work. A copy of the second edition, dated 1949, has now been received, and contains various revisions, notably a chapter devoted to track stresses, based on recent research in India and elsewhere. As it includes notes on track elasticity, the effects of speed and curvature, oscillation and locomotive balancing, as well as longitudinal and transverse stresses, supported by actual examples, this a valuable addition. The book is now divided into four parts dealing with track materials, design and layout; construction and maintenance; ancillary subjects; and appendices; and many of the diagrams have been redrawn. The paper and printing are good and a great improvement on those in the first edition. There are also more illustrations, including an excellent one of a locomotive of the latest "W.P." Pacific type, and other useful additions.

Wiggin Nickel Alloys.—The firm of Henry Wiggin & Co. Ltd., Wiggin Street, Birmingham, has issued an illustrated booklet containing considerable information on the use of Nimonic alloys in the combustion system of the Armstrong-Siddeley Mamba gas turbine aero engine.

Among the illustrated applications of Wiggins Nickel Alloys is a description of the control gear used on the Liverpool Street-Shenfield electrification scheme.

Power Transformers and Industrial Rectifiers.—Of considerable interest is a "Davenset" illustrated leaflet published by Partridge Wilson & Co. Ltd., Davenset Electrical Works, Leicester, giving details of many of the specialised products manufactured at its Leicester works. The products include power transformers, industrial rectifiers and battery charging equipment.

France in 1950.—Holiday travel literature in English distributed by French Railways Limited, 179, Piccadilly, London, W.1, includes an illustrated brochure on travel in France, with a map of French National Railways motorcoach routes, a sketch-map showing places reached from the various Paris termini, some excellent photograph reproductions in colour and half tone, and information on travel topics ranging from baggage registration to wines. Gaily coloured folders, each of which covers one or two tourist regions, contain more detailed local information, and an attractive relief-type map.

Thos. Cook & Son Ltd. Holiday Programmes.—The relaxation of currency restrictions on travel to Denmark, Norway, and Sweden, which were mentioned in our February 24 issue, will enhance the attractions of these countries for the British holidaymaker. The 1950 programme includes holidays in the northern capitals and the Norwegian fiords, Danish coast resorts, on the west coast and the lake district in the interior of Sweden, and the mountains of Norway. A large variety of escorted and independent tours by rail, road, and air, embracing resorts from Cortina to Syracuse, is offered in the Italian holidays programme. The booklet is profusely illustrated, with details of a surprisingly large number of tourist centres and hotels, more particularly in the Dolomites and on the Riviera.

Railway Freight Charges

A scheme of ceiling charges designed to avoid the economic hazards of complete rates revision

By Edmond A. Grace, A. C.A.

CO-ORDINATION of rail and road transport must necessarily proceed on the lines of first determining the most efficient service for given operations, and the development of that particular service for those operations, to the exclusion of the other. The ultimate objective obviously must be to provide the most efficient transport at the lowest cost, and with the minimum idle capacity. In the case of the railways, since this latter factor is the most important single factor in costs, the policy must be to put every possible ton of traffic consistent with efficiency on rail up to the optimum capacity of the railways. Though this problem may be complex, nevertheless, as between the railway and public road transport under the same or co-operating authorities, a decision can be made on strict terms of relative efficiency; but the pattern is not solely determined by public transport authorities.

In so far as the business public is permitted to carry its own goods in its own vehicles over any distance, it is the arbiter of the means of transport to be used, and, as at present the number of vehicles operated by Road Transport Executive is diminutive by comparison with the number of "C"-licensed vehicles, it is reasonable to say that the owners of these latter vehicles, marginal operators as they are, constitute, when taken as a group, the most powerful factor in the co-ordination and rationalisation of the means of transport.

The basis on which traders determine their choice between the use of public transport and of their own vehicles is, therefore, the primary factor in the transport problem. Does their decision in favour of using their own vehicles truly reflect the superior efficiency of road transport?

Much stress is laid on the question of relative efficiency of service, but the relative cost of service also must be taken into account. The businessman weighs the advantages given by one service over another, against the margin, if any, by which the cost of that service exceeds the alternative. To the businessman efficiency has its price, more than which he dare not consistently pay and remain solvent. The cost of transport, though not the only factor, is a vital factor in determination of the means to be used.

Two Groups in Transport

From the point of view of road costs and railway charges, goods transport may be divided into two major groups:—

- (i) Traffic which is, from the individual trader's point of view, more economically carried in his own vehicles, because of the

circumstances in which it is passing, and taking all factors of service and cost into account, including, in particular, current railway rates.

- (ii) Traffic which, having regard to all the foregoing considerations, is more economically carried by the railway.

In the case of the first group, however, though the railway is less economic than the road to the individual trader because his road costs are below the level of railway charges, it does not follow that the railway is less efficient from the national point of view.

The conveyance of a substantial portion of this traffic by rail would certainly not increase railway costs by more than a small fraction of the charges which would be payable by the traders at present rates. In many cases, however, even if it is assumed that the services by rail and road are identical, the charges for rail transport exceed road costs, and a number of firms can substantiate their claim that by crediting their transport section with the amounts that would otherwise be paid to the railway, they can show a profit on working.

Effect of Present System

Thus the anomaly arises that the rates structure, designed originally to secure the maximum traffic, now tends to deflect from rail traffic which could be carried by that means more cheaply than by road. Should, therefore, the entire structure be modified, and if so, what will be the effect on the very substantial second group of traffic which the railways at present retain?

In so far as the railways retain traffic, the discriminatory rates system continues to be effective. This system, simply stated, aimed at ensuring that every ton of traffic which would show a margin between direct or special costs and the maximum charge which it would bear, was secured to the railways.

The objective from the national point of view was the provision of the maximum economic transport service—to adapt a well-known maxim—to secure equilibrium of revenue and expenditure at the highest point of service. From the sectional point of view of the railways, it enabled the greatest revenue to be secured for a given level of fixed expenditure. It is implicit in the theory on which the discriminatory system of charging is based that some traffic would not pass at all at higher rates. The old phrase so commonly used to sum up the railway rating principle—"charging what the traffic will bear"—clearly indicates this conception.

If there is today a substantial amount of traffic passing by rail which will not bear higher rates—and there is no reason to assume that conditions in this respect have changed so fundamentally over the years—then any serious modification of the rates structure may cause further loss of revenue apart altogether from the economic repercussions on industry.

Long-Term Road Costs the Ceiling

How, therefore, can the discriminatory rates system be amended so that attractive rates can be offered to the marginal group who use, or tend to use their own vehicles, while avoiding the danger of undermining the structure for traffic which continues to pass by rail?

It is clear that, though the existing classification may continue to function satisfactorily in respect of traffic for which the railway rates are below the level of the particular trader's road costs, those charges cannot secure traffic above that level. The determination of this level is, therefore, vital to the demarcation of the two foregoing groups. There is, however, no general level of road costs per ton or per ton-mile. It varies, apart altogether from such factors as fuel consumption or maintenance, with transport circumstances which influence the long-term road costs of each concern.

The most important factor in cost variation to the "C"-licensee is the load factor over a period as determined by such features as the normal size of consignment, the regularity with which it passes, and the availability of return loads. Thus, as the classification which operates effectively for traffic passing on the railway is based on commodity grouping, the appropriate classification or grouping of "C"-licensee's traffic must be based on the transport circumstances of each concern over an appropriate period, and in particular on the number and capacity of road vehicles which it could economically operate. The answer to the problem of amending the present system appears to lie, therefore, in providing ceiling charges based on the levels of road cost applicable to each concern, and below which the discriminatory rates would apply.

It is not suggested, however, that such ceilings should be incorporated in the rates structure. Indeed, this could not be done effectively, since the dominant economic factors in each group are irreconcilable and because, as stated above, the level varies between one concern and another.

A commodity which may be forwarded economically on road by one consignor, due to the circumstances of his business, may be more economically sent at rail rates by another. The sug-

gestion is, therefore, that the ceilings should not be incorporated in the rates structure at all but should be fixed in such manner as to provide an alternative for those traders who, in their own judgment consider them more economic than the discriminatory scale, and, because of the basis of calculation, more economic than the use of their own vehicles.

Existing Revenue Not Prejudiced

Such ceiling charges, based on road factors, would not prejudice existing revenue, because it can reasonably be assumed that traffic is not passing, or at least will not continue to pass by rail above the level of road costs for regular load lots.

The scheme, therefore, would be designed to secure traffic now lost to "C" licensees, which constitute the great majority of operators of road freight vehicles, or at retaining traffic likely to be so lost. It would, in effect, be designed to leave, what may possibly be well enough, alone, for the present—below the level at which rail charges are now effective—while, at the same time, making a virtue of necessity above that level.

Two-Part Tariff Contracts

The proposal is accordingly, that instead of devising a new rates structure based on road factors, the existing structure should remain, but that, in addition, and alternatively, a series of standard contracts at pre-determined fixed and published rates based on long-term road factors be offered to the public. These contracts would be based on a two-part tariff, a fixed portion based on the annual fixed expenses of the most efficient road unit for each load capacity, and payable in full over the period of contract without reference to the quantity of traffic passing or the distance which it is hauled; and a variable portion based on the estimated running costs of that unit for each operation. This variable portion, however, would be calculated at a figure below the normal road costs to offset the advantages in service to a trader of having his own vehicles. Such reduction would not operate for mileages below the minimum economic rail haul.

General Conditions

Parties entering into such a contract would be required to specify the number and capacity of the units required for a period of, say, one year. In respect of each unit contracted for in this manner, they would undertake to pay the standard annual charge, and would receive a book of vouchers for each working day which would enable them to forward goods under the following general conditions:—

(i) The load forwarded on any voucher should not exceed the weight specified on the voucher. Goods in excess of the weight for which a voucher is available would be charged the ordinary class rates.

(ii) It could be made up of any class or classes of goods, but they should all be the property of the consignor.

(iii) The load should be to one destination or to destinations within a specified zone, but not necessarily to one consignee.

(iv) The distance to which the load would be forwarded should be limited to the economic daily range of the equivalent road unit. Mileage in excess of this would be subject to a surcharge, or two, or more successive vouchers could be used to make it up.

(v) Loads to two zones could be covered by one voucher if the combined mileage did not exceed the permitted mileage.

(vi) Vouchers would not be available on any day other than on the date shown thereon, except where two or more vouchers are used in succession to cover a long haul.

(vii) Return loads up to the weight specified on the voucher would be charged at an appropriate reduced rate based on tonnage, in respect of any voucher where the back-load is available within a specified time, and is advised at the time of forwarding.

(viii) The variable charge which would cover collection and delivery would be based on the running costs of the equivalent road unit; but for distances calculated to be in excess of the minimum economic rail distance, having regard to terminal expenses, the variable charge would be calculated at a figure which would be a significant margin below road costs.

(ix) The owner should load and unload, or a handling charge per ton should be raised in addition to the foregoing charges.

Analogous to Road Hire Contracts

It is impossible in any charges system to reproduce every factor of road costs so as to cover all the circumstances which could arise. The most that can be done is to cover as accurately as possible the principal factors in such a way as to be effective over a period for the majority. By comparison with tonnage scales for road haulage which function effectively for a large block of traffic, but which do not take cognizance of the long-term aspect of any one section of traffic, the proposed method of charging, which lays such emphasis on vehicle user, approximates more nearly to the true cost to the trader.

Indeed, a type of contract very similar to that proposed herein has been found advantageous by road haulage concerns who operate fleets of vehicles on a hireage basis for some traders. By comparison, the present proposal, though not providing a specific vehicle bearing the hirer's name and colours, offers, on comparable terms, a service which, for distances over the minimum rail haul, is cheaper than road costs.

Charges Published

The scheme has the advantage that, unlike agreed charges which have to be negotiated in each specific case, the charges under this proposal can be published as the standard charges which can, without approaching the railway

authorities, be considered by every trader in the country in the light of his own circumstances. The trader would voluntarily choose the scheme himself as an alternative to the class rates. He would determine the number and capacity of units for which to contract. On the one hand, he would be liable for excessive fixed charges if he over-estimated his requirements, while on the other, he would lose the benefit of the lower variable charges if he under-estimated his requirements. Further, by reason of the standard nature of the charges proposed, the possibility of undue preference would be avoided; everyone who wished to adopt the scheme would be entitled to do so.

The question of relative efficiency of service has not been stressed up to this point, as it is primarily necessary to ensure that railway charges are competitive with road costs even at approximately the same degree of efficiency. In so far as the road may give a better service than the railway, the reduced "running costs" (see *viii* above) will tend to offset the road advantage.

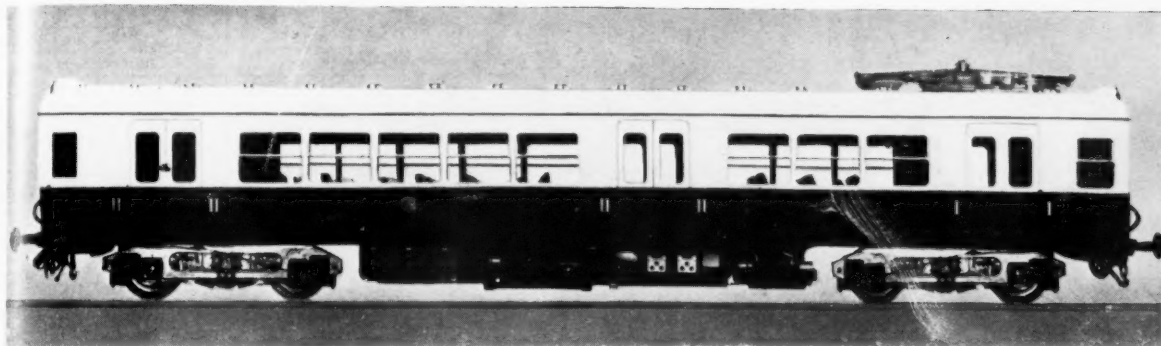
The scheme is submitted as one that may secure an appreciable increase in traffic to the railways, or at least retain traffic which, due to considerations of cost to the trader, may be lost in the near future, while avoiding the economic hazards of a complete revision of rating methods.

COUNCIL OF INDUSTRIAL DESIGN PHOTOGRAPHIC SERVICE.—Among the facilities offered by the Council of Industrial Design, Tilbury House, Petty France, London, S.W.1, to manufacturers and designers, are a photographic reference library, duplicate copies of photographic prints on loan for a small fee or for sale, with facilities for obtaining special prints, and slides. Subjects embraced include railway and road transport rolling stock and equipment. Additions are constantly being made to the collection in connection with exhibits for the Festival of Britain.

NORTH EASTERN REGION HOLIDAY RUNABOUT TICKETS.—Five different areas of the North Eastern Region are now covered by weekly holiday runabout tickets. These tickets, third class only and at half price for children, are available now and throughout the summer from any Sunday until the following Saturday; during this period there is unlimited travel within the chosen area. A new area of Yorkshire, compared with last year, is covered by ticket No. 12, which costs 30s. and includes Leeds, York, Malton, Pickering, Whitby, Scarborough, Filey, Bridlington, Market Weighton, and Selby. County Durham and North Yorkshire are catered for by ticket No. 15 at £1, which includes Darlington, Stockton, Middlesbrough, Redcar, Saltburn, Stokesley, Whitby, and Scarborough. Northumberland's share in the facility is covered by ticket No. 20 at £1, including Alnwick, Rothbury, Billingham, Brampton, Alston, Newcastle, and main-line stations to Alnmouth. Ticket No. 22, which costs £1, covers Bridlington, Hornsea, Withernsea, Hull, Cleethorpes, Grimsby, Doncaster, and Goole. Yorkshire also has ticket No. 23 at £1 which serves York, Helmsley, Whitby, Scarborough, Filey, Bridlington, Market Weighton, and intermediate stations.

Electric Rolling Stock for Estoril Railway, Portugal

Motor coaches and trailers for a 1,500-V. d.c. system connecting Lisbon with the holiday resorts of the Tagus estuary



First and second class motor coach with electrical equipment for 1,500-V. d.c. operation

ROLLING stock, comprising two first and second class motor coaches, two second class trailers and three third class trailers ordered from the General Electric Co. Ltd. by the Sociedade Estoril, to which we referred in an editorial in our issue of March 3, has just been completed at the works of Cravens Railway Carriage & Wagon Co. Ltd., Sheffield.

The whole of the electrical equipment for the rolling stock has been supplied by the General Electric Co. Ltd., and the bodies, underframes, bogies and

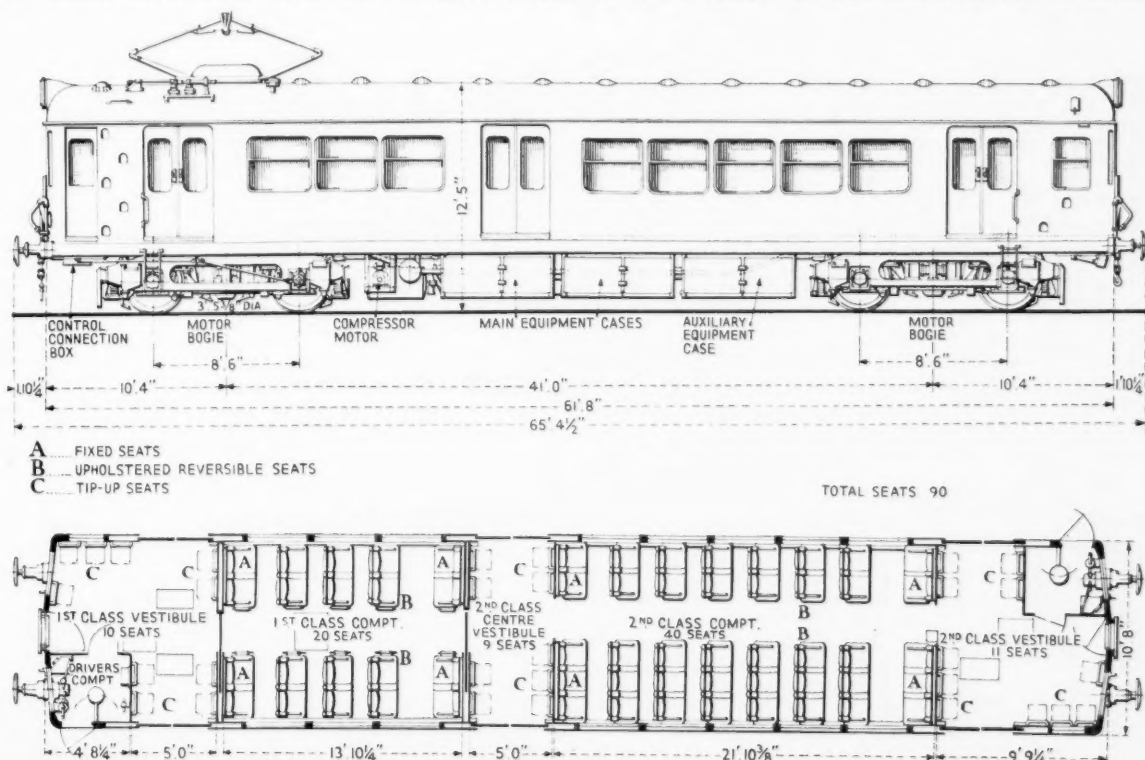
other mechanical equipment have been manufactured by Cravens Carriage & Wagon Co. Ltd. as sub-contractors to the General Electric Co. Ltd. The stock is required for service on the 5 ft. 6 in. gauge railway running from Cais do Sodre Station, Lisbon, to Cascais, a distance of 15½ miles and following the northern shore of the Tagus estuary, serving the holiday resort of Estoril.

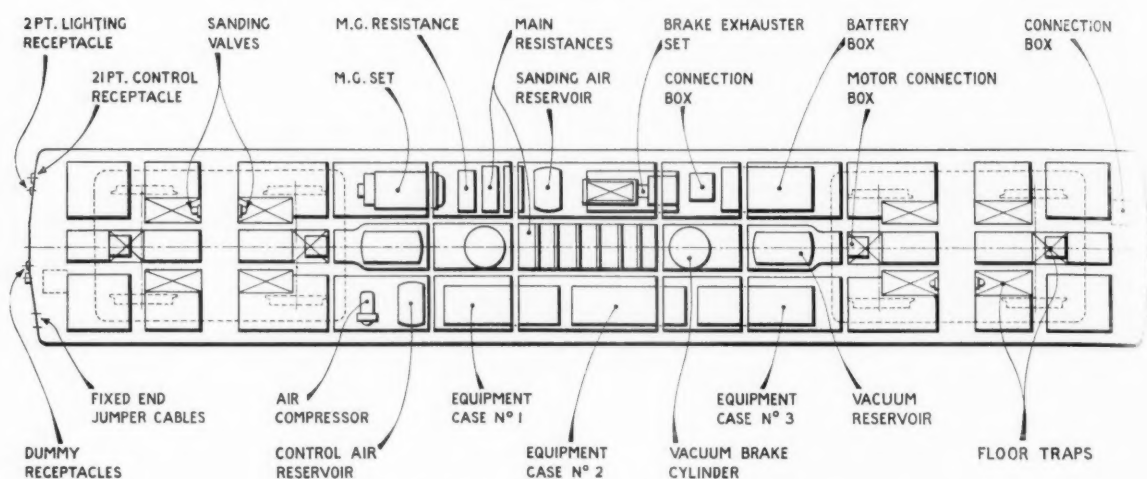
The line is electrified on the overhead system at 1,500 V. d.c., and the electrical equipment of the rolling stock is designed for operation over a voltage

range from 1,600 maximum to 1,100 minimum. The train services consist of all-stations, semi-fast and fast trains, the former running non-stop from Lisbon to Pedroucas, a distance of 4½ miles, or Cruz Quebrada, a distance of six miles, the fast trains running non-stop to S. Joao de Estoril (14 miles).

Body Construction

The all-steel construction of the coaches is such that the roof, bodysides and underframe form an integral load bearing structure; the roof is of the ellip-





Motor coach underframe, showing layout and wiring arrangements

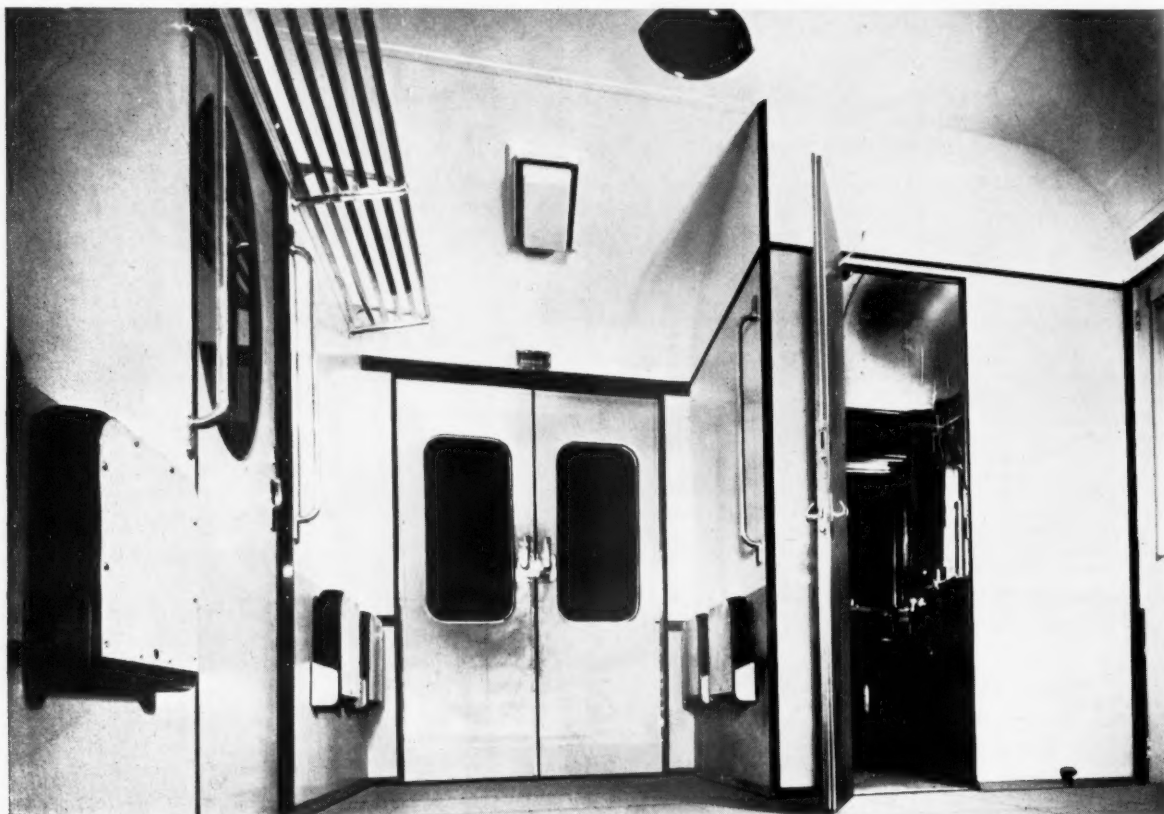
tical type having continuous longitudinal members tied across by pressing carlines, with the roof sheets riveted on.

The bodyside framing is formed of fabricated pillars and continuous longitudinals, and the panelling is attached by welding and all joints ground flush to give a smooth exterior finish. The whole of the inner surface of the body structure is insulated with sprayed asbestos, and a continuous space between the

inner and outer panelling of the sides and roof allows free air circulation.

The underframe is built up of rolled and pressed sections and plates welded together, the solebar forming the bottom member of the bodyside girder and giving a continuous curved-under profile. Deep girder centre longitudinals are incorporated in the underframe of the motor coaches to take a proportion of the floor load and control equipment.

The floors of all cars are carried on 16 S.W.G. galvanised steel dovetail section sheeting, plug welded to the underframe and stiffened at doorways with angle sections riveted to the underside of the sheeting; a cork floor covered with cork tiles, giving a thickness of $1\frac{1}{2}$ in. from the top of the cork to the underside of the corrugated sheeting, with covings at the body sides, ends and partitions, makes up the floor



First class vestibule and driving compartment

on motor coaches and second class trailers. Third class trailers have the sheeting filled with Decolite to give a thickness of 1½ in.

The windows in the first and second class compartments are of the half drop winding type glazed in steel window pans with patent rubber glazing; and in the third class cars are of similar construction but fitted with spring catches; spring roller blinds of leathercloth with silver backing are fixed to all compartment and vestibule windows.

Interior Design

The interior finish consists of Formica plastic panels with Delaron mouldings and follows a modern type of interior decoration giving a very pleasing appearance. Where notices have to be mounted on this type of interior finish, e.g., seating notices on partitions, Perspex, engraved in a contrasting colour on the underside, is applied to form a suitable and pleasing mounting; all other interior and exterior notices are gold leaf transfers.

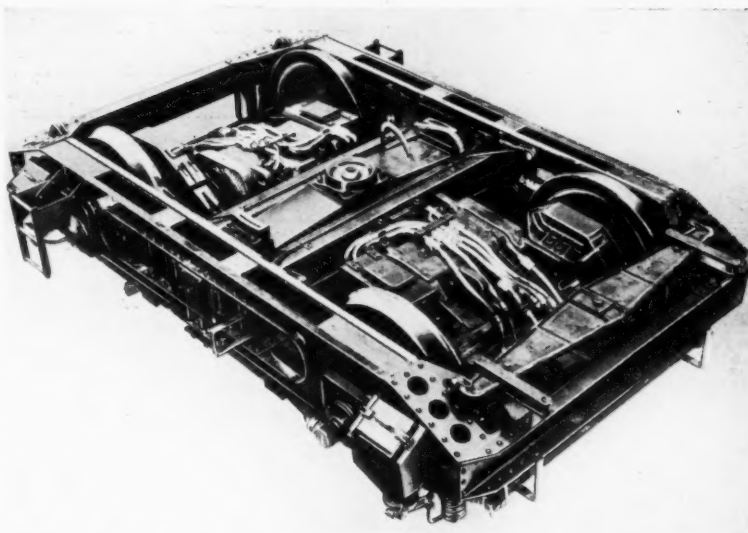
The first class interiors are finished in blue below the waist, and grey above, the second class have wood grain below the waist and buff above, while the third class is finished in Delaron C.P.3 below the waist-rail and ivory above. Seats in the first and second class are of the rever-

sible type, the operating mechanism being totally enclosed.

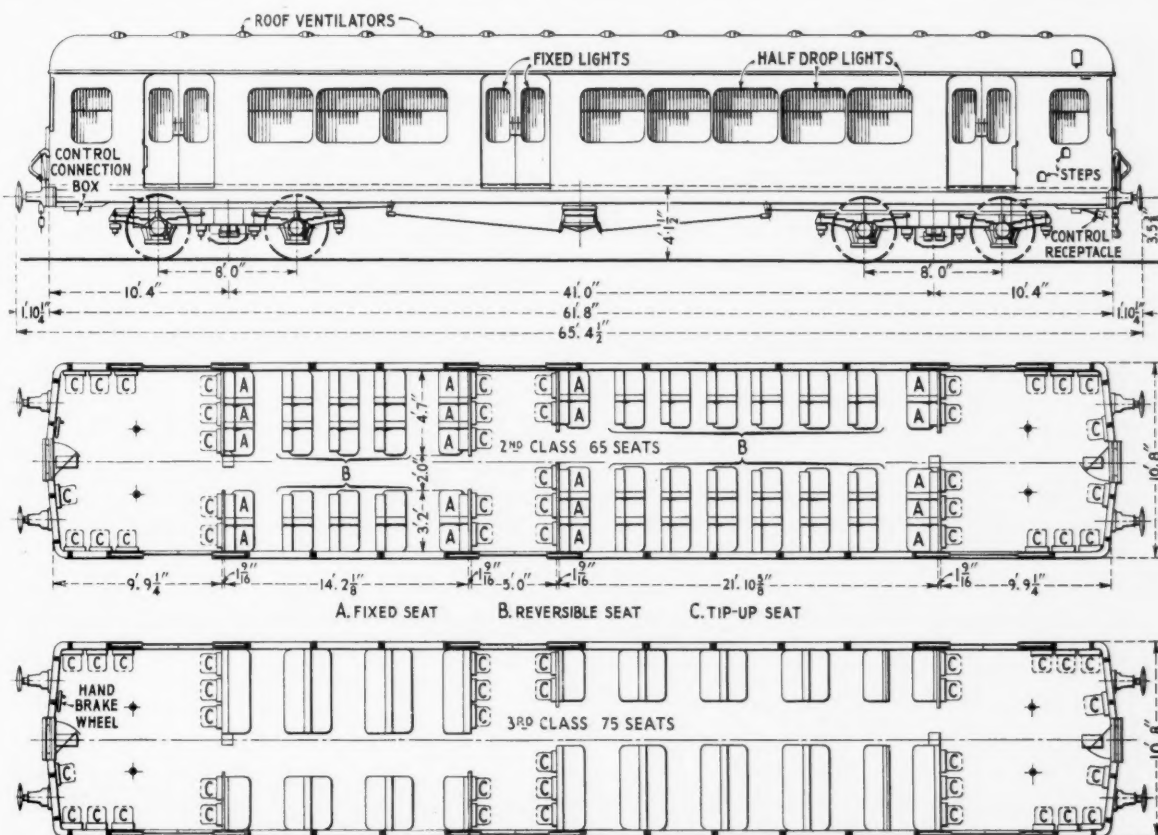
First class seats have Dunlopillo cushions, upholstered in blue Vynide leathercloth, with red trimmings, second class seats have spring interiors with brown Vynide leathercloth upholstery.

and the third class seats consist of fabricated steel frames with timber laths.

Other features incorporated in the body are: a ventilator of a grille type at each body end and operated by a Bowden cable from a regulator screwed to the interior; circular mirrors and an



Motor bogie with two 170-h.p. axle-hung traction motors



Elevation and plans of trailer, showing second and third class seating accommodation

elliptical first class compartment door glass; and parcel racks of extruded aluminium section with cast aluminium brackets. A gangway with a collapsible gateway is fitted at each body end; recessed folding steps at the body side are provided for access to the side lights and roof.

Both motor coaches and trailers are of saloon design with large vestibules at each end and a central transverse corridor. Three double-entrance doors on both sides of the body are hand-operated, sliding into pockets; hinged doors are fitted at the ends of the cars and at the driver's compartments, and sliding doors, having elliptical glazing separate the first class compartment and the vestibules.

Seating accommodation is provided in each motor coach for 20 first class and 40 second class passengers; owing to the ample space provided in the vestibules, seating accommodation is supplemented by auxiliary tip-up seats for ten first and 20 second class passengers. The second

class trailers seat 65 and the third class trailers 75 passengers; auxiliary tip-up seating is also provided for 36 passengers or 35 where the handbrake is fitted. All tip-up seats are spring-loaded and lie flat against the partitions when not in use.

Electrical Equipment

Each motor coach is carried on two two-axle bogies, with two nose-suspended, axle-hung motors in each bogie. Maximum speed is 80 km.p.h. (50 m.p.h.). Current is collected by a pantograph of a recently developed design pneumatically raised or lowered by momentary operation of an "up" or "down" push-button in the driving compartment. Apart from the main isolating switch alongside the pantograph on the roof, and the driver's controls, all the equipment is mounted on the underframe.

The main and auxiliary control equipment is arranged in three semi-permanently mounted cases, two of which con-

tain the control gear for the main motors, and the third the control gear for the auxiliary machines and the battery. Also on the underframe are a 1,500/110 V. d.c. motor-generator set for the control circuits, lighting and battery charging; a motor-driven (110 V.) compressor to provide compressed air for pantograph operation and the electro-pneumatic contactors; and a motor-driven (1,500 V.) exhaustor for vacuum braking. The remainder of the underframe-mounted electrical equipment comprises the control resistances and the battery.

All three equipment cases are provided with quickly detachable front and rear inspection covers. The covers for the main equipment cases and the H.T. section of the third case are fitted with safety interlocks to prevent access to their interiors unless the 1,500 V. circuits are dead; a steel partition separates the H.T. section of No. 3 case from the 110 V. compartment.

The two motors in each bogie are connected permanently in series, control being effected by series or parallel connection of the pairs. The motors are self-ventilated, and are rated as follow at 750 V.:—

	Full field	Weak field
1-hr. rating ...	165 h.p.	170 h.p.
Continuous rating ...	130 h.p.	140 h.p.

The motors drive the axles through single-reduction straight spur gearing with a ratio of 17/84. The armatures are mounted on grease-lubricated roller bearings; sleeve type bearings are used for the axle suspensions and are oil-lubricated by means of wool packing.

Master Controller Positions

There are five positions for the main drum of the master controller; the first is an "off" position, and the second a shunting notch, placing all resistance in circuit and motors in series. On moving the controller handle to the third (series) position, automatic acceleration up to full series takes place. The fourth position (parallel) effects transition by the bridge method and allows the accelerating sequence to proceed automatically up to full parallel. A fifth position (weak-field) is provided to obtain the maximum running speed, the reduced field value being given by tapings on the field windings.

The main drum is operated by the usual type of controller handle, with dead man's button arranged to switch off the power and initiate an emergency brake application if released during running. Once the dead man's mechanism has tripped, it cannot be reset until the handle is returned to "off." The reverser handle on the master controller takes the form of a removable key which ensures that only one driving position in the coach is operative at a time. As well as controlling the direction of travel, the reverser drum enables alternative rates of acceleration to be selected for forwards running.

There are, therefore, four positions for the drum: (1) Reverse, low value



First class section seen through the elliptical window of the door leading into the vestibule

acceleration; (2) Off; (3) Forward, low value acceleration; and (4) Forward, high value acceleration.

Overload Protection

Overload protection for the motors is provided by an overload relay with a trip coil in each two-motor circuit. If the relay is tripped by any normal fault, a section of the starting resistance is switched into circuit before the line contactors open.

The no-volt relay has both voltage and current windings. Provided power is on the coach, the no-volt relay contacts close as soon as the reverser is operated, the voltage coil being energised through an auxiliary relay. When the master controller is moved to the series running notch, the closing of the first resistance contactor is arranged to release the auxiliary relay, but the no-volt relay contacts are held closed by the main motor current now flowing through its current coil.

If the power fails, the contacts are released, and the control equipment returns to the "off" condition. Restoration of the supply again closes the no-volt relay via the auxiliary relay, and if the interruption has been momentary, so that the master controller has not been returned to "off," the equipment notches up again automatically. This arrangement avoids overloads due to sudden restoration of current with the equipment in full series or full parallel, such as might occur after a short break in the supply caused by a line or pantograph fault.

Either pair of motors may be cut out of circuit by means of a hand-operated switch, should this be necessary for any reason, and limited operation is permissible on the other pair. All H.T. circuits can be isolated and earthed by the main equipment isolator on the roof, which is operated from the ground by means of a hooked stick. The auxiliary H.T. circuits are fed from the dead side of the isolator through a main auxiliary fuse associated with a protective resistance.

The L.T. (110 V.) circuits are un-earthed, and protected by main positive and negative fuses. A control switch is fitted in each driver's compartment, but only one switch can be closed at a time as both are operated by the same key, which can be removed only when a switch is off. In addition to the driving and brake equipment, each driver's compartment is equipped with a voltmeter, ammeter, speedometer, and mileage counter driven from an axle end, and a pneumatic horn which is operated by a foot pedal.

A pneumatic windscreen wiper and movable glass sun visor are fitted to the front window. The driver's seat is an adjustable swivelling cantilever type.

The motor of the M.G. set for L.T. supply is fed through its own fuse from the dead side of the H.T. auxiliaries protective resistance. It is started or stopped by momentary operation of starting or trip push-buttons in each

driver's cab. The motor-generator set is totally enclosed, but is frame-cooled by means of an external fan. Motor and generator armatures are assembled on a common shaft, and the whole is mounted in ball and roller bearings in a one-piece cast steel shell. The motor is a two-pole machine run direct from the 1,500 V. supply.

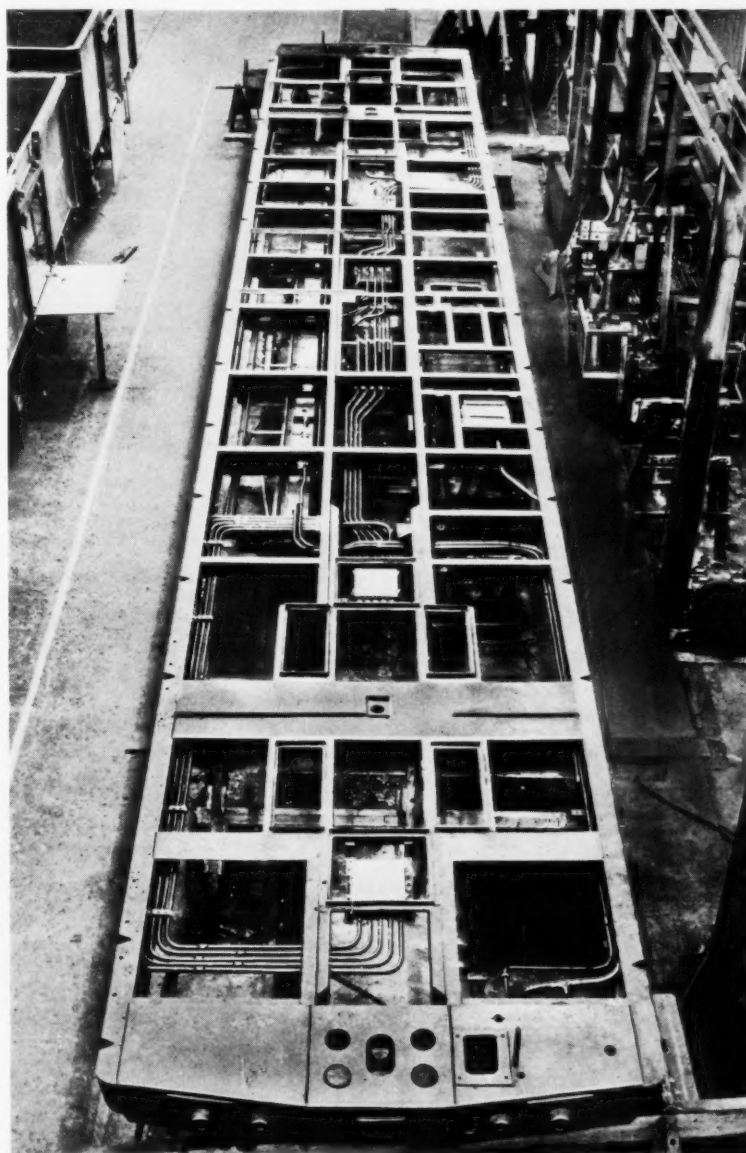
A carbon pile regulator maintains a substantially constant voltage output from the L.T. generator over a wide range of line voltage. The set is rated to give an output of 8 kW. continuously. The battery supplying the train lighting circuits floats across the L.T. generator, and cannot be used for lighting unless the generator is running, as it is connected to the lighting circuits through double-pole fuses and a contactor which

is energised by the generator output. Excessive demands on the battery are therefore prevented. Set and trip control buttons for the lighting contactor are provided at selected points in the coaches.

The compressor motor operates on the L.T. supply. It can be supplied from the battery when the H.T. circuits are isolated so that contactor operation can be checked during maintenance, the contactor energising coils also being fed direct from the battery in these circumstances.

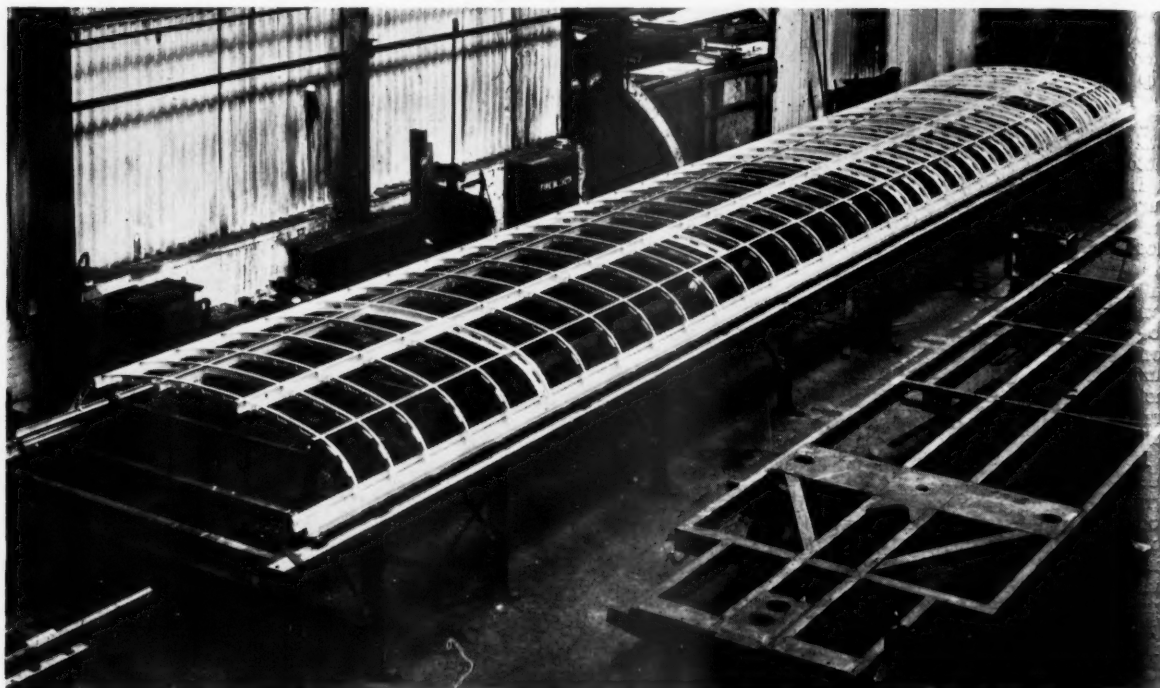
The exhaustor motor operates at two speeds obtained by a field tap system, a low speed for holding off the brakes normally and a high speed for brake release. The high speed is obtained

(Continued on page 578)

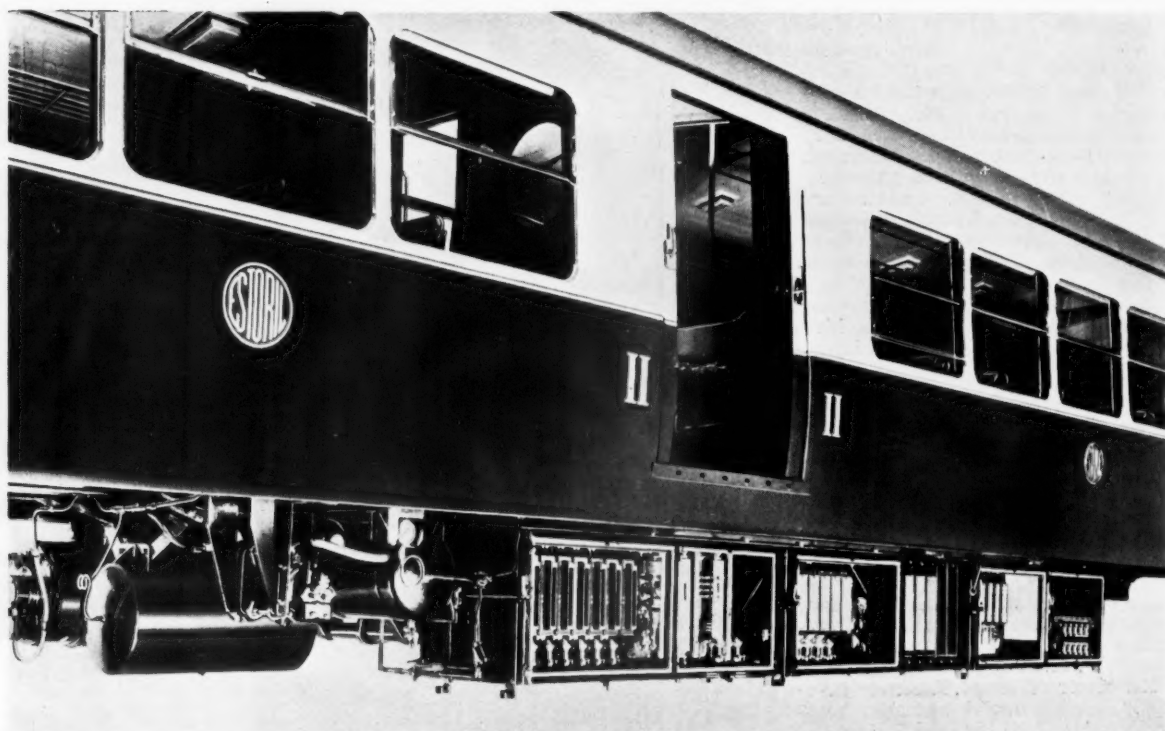


View of underframe showing cable runs

Electric Rolling Stock for Estoril Railway, Portugal



Motor coach for the Estoril Railway under construction, showing roof framing



Main and auxiliary control equipment cases mounted on underframe

RAILWAY NEWS SECTION

PERSONAL

RAILWAY EXECUTIVE APPOINTMENT

Mr. C. W. Barclay, Assistant (Wages), Regional Staff Office, Glasgow, has been appointed Staff Officer (Operating Staff) at the Railway Executive Headquarters, London.

Mr. H. H. Halliday, Regional Staff Officer, Eastern Region, received the insignia of an Officer (Brother) of the Order of St. John at an Investiture held by Lord Wakehurst, the Lord Prior of the Order, in the Great Hall of St. Bartholomew's Hospital, on May 18.

Mr. T. M. McKeown, Manager of the Canadian Pacific Railway Sleeping, Dining & Parlour Car Department for 13 years, has retired. He is succeeded by Mr. J. L. Sugden, General Superintendent of the department for the C.P.R. Prairie and Pacific Regions.

Mr. E. R. Hondelink, late Director General of E.C.I.T.O., has been invited to be, as consultant on transport, a Member of a mission which the Turkish Government has asked the International Bank for Reconstruction & Development to organise, to make a survey of the Turkish economy, designed to help in deciding on investments, developments and improvements in many fields. One of the fields of major importance is that of road, rail and water transport. Mr. Hondelink is leaving for Washington on May 25 and after consultation there is proceeding to Turkey.

At a luncheon on May 10, given by the Board of Trade to the advisory committees of the British Industries Fair, Mr. Harvey Rhodes, Parliamentary Secretary to the Board of Trade, announced that the present fair would be the last for which Mr. R. E. J. Moore would be responsible as Director. Mr. Moore, who is due to retire next year, has spent 30 years in the service of the Board of Trade, during 25 of which he has been associated with the British Industries Fair.

We regret to record the death of Mr. Pierre Challamel, Director of *Rail et Route*, and Manager of the Paris technical publishing firm Editions, Publicité P.P.C.

The Department of the Chief Public Relations & Publicity Officer of the British Transport Commission will assume direct control of the Travel Press & Publicity Company, Edinburgh, a former subsidiary of the Scottish Motor Traction Co. Ltd., as from June 1, following the resignation of Mr. W. A. Woolward. Mr. T. Steel, who has had 22 years' experience in advertising and was formerly Production Manager of John Menzies & Company, Glasgow, has been appointed to take charge of Travel Press and of the British Transport Commission's Commercial Advertising, Public Relations & Publicity activities in Scotland.

Mr. J. B. Mavor, M.I.Mech.E., M.I.E.E., who, as recorded in our May 5 issue, has been elected Chairman of the North British Locomotive Co. Ltd., was educated at Glasgow Academy and the Royal Technical College, Glasgow. He served his apprenticeship with Fairfield Shipbuilding & Engineering Company, Drysdale & Co. Ltd., St. Rollox locomotive works, and Mavor & Coulson Limited, and during the 1914-18 war served in a Royal Engineers

Mr. Hugh McIntyre, Chief of Division (Workshops & Technical) in the Mechanical Department of the General Roca Railway, retired on pension on March 31.

Mr. C. Allan Fee has been elected Secretary of the American Car & Foundry Company, from May 1, 1950, in succession to Mr. Howard C. Wick, who has retired after 45 years' service with the company.

Mr. M. E. Doke has been appointed Passenger Traffic Manager of the Central Region, Canadian National Railways, with headquarters at Toronto, and Mr. J. S. McDonald, General Passenger Agent at Montreal.

Mr. George Carr, Sales Manager, Upholstery, Dunlop Rubber Co. Ltd., is at present on a visit to Norway and Sweden. Mr. Leonard Harral, General Sales Manager of Dunlopillo, has just returned from Switzerland and Mr. A. M. Harral, its Export Sales Manager, from Holland and Belgium.

Mr. W. P. S. Cockle, who is in charge of the Schemes, Parliamentary Plans & Design Section in the New Works Engineer's Office, London Transport, has been appointed a Principal Executive Assistant. During the late war Mr. Cockle served for three and a half years in the department of the Civil Engineer-in-Chief, Admiralty, and returned to the service of London Transport in 1945.

Mr. Iain Maxwell Stewart has been appointed Chairman of Thermotank Limited and associated companies. He is a graduate of Glasgow University and Royal Technical College, and served in the works and drawing offices of his firm until interrupted by war service. After recall in 1941 he joined the board of the Company and in April, 1945, was appointed Managing Director. Other business associations of Mr. Stewart include directorships of Glenfield & Kennedy Limited and the Engineering Centre Limited.

Mr. J. J. Hughes, M.Inst.T., who, as recorded in our April 14 issue, recently announced his decision not to seek re-election to the Chairmanship of the Traders' Coordinating Committee on Transport, is a Founder Member of that Committee, and has been Chairman since 1931. Mr. Hughes, who was born in 1874, has been connected with the transport industry for many years. He was a member of the 1923 Committee of Inquiry as to whether the railways should have power to carry goods by road, and was for five years a member of the Transport Advisory Council. He also served for a time as a member of the National Wages Board under the Railways Act, 1921. Mr. Hughes gave evidence on several occasions before the Railway Rates Tribunal, and served for a period as a co-opted member of the Tribunal. He was



Mr. J. B. Mavor
Elected Chairman, North British
Locomotive Co. Ltd.

field company, attaining the rank of Major. In 1920 he became a Director of Mavor & Coulson Limited and Managing Director in 1934; he was elected Chairman in 1945, a position he still holds. During the 1939-45 war Mr. Mavor was Chairman of the North West Engineering Employers' Association and Chairman of the Emergency Services Organisation for the West of Scotland. He joined the board of the North British Locomotive Co. Ltd. in 1944. Among other positions he holds are those of Chairman of M. & C. Switchgear Limited, and of the Regional Board for Scotland of the Scottish Engineering Employers' Association; Director of the South West Scotland Electricity Board, the Glasgow Chamber of Commerce, and of the Merchants House. Mr. Mavor is on the board of governors of the Royal Technical College, Glasgow, and Glasgow Academy, and is Assessor to the Lord Rector, Glasgow University. He was Chairman, Scottish Centre of the Institution of Electrical Engineers, 1935-36.



Mr. J. J. Hughes

Chairman, Traders' Co-ordinating Committee on Transport, 1931-50



Mr. M. F. Barnard

Appointed Chairman, Traders' Co-ordinating Committee on Transport



The late Mr. P. R. Agarwal

Chief Mechanical Engineer, Jodhpur Railway 1948-50

for thirty years adviser on transport to the National Association of Biscuit Manufacturers also to the Association of British Chambers of Commerce, and he is Chairman of the Transport Committee of the London Chamber of Commerce. Mr. Hughes also served for ten years as Chairman of the Transport and Shipping Committees of the Federation of British Industries, and for a long period as Vice-Chairman of the Traders' Dock & Harbour Co-ordinating Committee of the Chamber of Shipping.

Mr. M. F. Barnard, who, as recorded in our April 14 issue, has been appointed Chairman of the Traders' Co-ordinating Committee on Transport, received his early railway training in the Chief Goods Manager's Department of the former L.N.W.R. and served as a Subaltern in the Surrey Yeomanry during the 1914-18 war. He returned to Euston in 1919 and in 1920 was invited to take up the appointment of Transport Officer to the predecessors of the British Iron & Steel Federation. Mr. Barnard has been responsible for all matters of rates and charges before the Railway Rates Tribunal affecting the iron and steel industry and has on numerous occasions appeared in person before that body. In 1932, in addition to Transport Officer, he was appointed Assistant Secretary of the Federation and relinquished this post in 1936 to take over the secretaryship of the Basic Pig Iron Producers' Association. In 1937, Mr. Barnard was appointed Secretary of the International Scrap Convention and of the International Ship-breakers' Association. At the outbreak of war the staff of the Federation formed the nucleus of the Iron & Steel Control of the Ministry of Supply and Mr. Barnard was appointed Establishment Officer. After the cessation of hostilities, Mr. Barnard resumed his previous responsibilities as Transport Officer with the additional duties of Administration & Establishment Officer. Mr. Barnard is a Past Member of the Council of the Institute of Transport; Vice-President and Chairman of the Mansion House Association on Transport; Chairman of the Rail Panel of the Federation of British Industries Transport Policy Users' Committee; a Member of the Executive Committee of the Traders' Dock &

Harbour Co-ordinating Committee, and a Member of Council of the Traders' Traffic Conference.

We regret to record the death of Mr. P. R. Agarwal, B.Sc.(Eng.), A.M.I.Mech.E., M.I.Loco.E., M.I.E. (India), Chief Mechanical Engineer, Jodhpur Railway, on April 28, at Bombay. Mr. Agarwal was born in 1908 and graduated in mechanical and electrical engineering from Benares Hindu University in 1930 where he stood first and was awarded the Prince of Wales Gold Medal. After his apprenticeship on the G.I.P.R. and the Jodhpur Railway, he joined the B.B.C.I.R. in 1935 and became District Locomotive & Carriage Superintendent at Ahmedabad and Bombay in 1939. In 1941 he was selected for the post of Assistant Chief Controller of Standardisation, Central Standards Office for Railways and in 1944 became Deputy Director, Mechanical Engineering, Railway Board. For his war services he was awarded the honour of Rai Bahadur in the New Year Honours, 1946, in which year he went on deputation to the United Kingdom to attend the Empire and International Standards Conferences as a delegate of the Government of India. On his return Mr. Agarwal served as Locomotive Works Superintendent, Dohad, and then as Carriage Works Manager, Ajmer; in 1948 he was appointed Chief Mechanical Engineer, Jodhpur Railway. Mr. Agarwal has contributed papers before various institutions and to technical journals, including *The Railway Gazette*; he was awarded the Railway Board gold medal and first prize twice for papers on "Diesel Traction on Indian Railways" and "Locomotive Manufacture in India." Mr. Agarwal was Member of the Faculty of Engineers, University of Rajputana, Jaipur; Board of Studies in Engineering, Andhra University; Internal Combustion Engines Research Committee of the Council of Scientific & Industrial Research, India; Prime Movers Panel, Government of India, Ministry of Industries & Supplies. He was a Member and original sponsor of the Indian Standards Institution and had recently been elected as Chairman of the Mechanical Section of the Institution of Engineers (India) for three years 1950-51, 51-52, and 52-53.

FUNERAL OF MR. C. F. DE PURY

The funeral of Mr. C. F. de Pury, London West Divisional Superintendent, Southern Railway and Southern Region, who died on May 7, took place at the Church of England Chapel, Brookwood Cemetery, on May 11. Those present, in addition to family mourners, included:—

Southern Region:—Messrs. F. J. Wymer, Assistant Chief Regional Officer, also representing Mr. C. P. Hopkins, Chief Regional Officer; O. W. Cromwell, Chief Officer for Labour & Establishment; S. W. Smart, Superintendent of Operation; H. B. Taylor, Assistant Operating Superintendent; P. A. White, Assistant to Superintendent of Operation; W. H. Corney, Assistant Commercial Superintendent, also representing Mr. W. H. F. Mepsted, Commercial Superintendent; R. F. Surry, Assistant Commercial Superintendent (Development); A. E. Hoare, Assistant Motive Power Superintendent, also representing Mr. T. E. Chrimes, Motive Power Superintendent; H. S. Matthews, also representing Mr. R. E. Sinfild, Continental Superintendent; F. T. Muncey, Rolling Stock Engineer to Electrical Engineer; A. Slade, Assistant Road Transport Liaison Officer to Commercial Superintendent, also representing Mr. C. W. G. Elliff, Road Transport Liaison Officer; A. C. Payne, Principal, Staff Training College, Woking; C. W. Hatch, Traffic Controller, Southampton Docks, also representing Mr. R. P. Biddle, Docks & Marine Manager; P. Nunn, London East Divisional Superintendent; J. Bridger, London Central Divisional Superintendent; A. Earle Edwards, Southern Divisional Superintendent; G. Bishop, Western Divisional Superintendent; R. D. Steele, District Motive Power Superintendent, Nine Elms; S. L. Furnivall, London (West) Divisional Engineer; F. H. Marshall, London District Freight Superintendent; W. J. England, former Superintendent of Operation, retired; E. F. Livesey, former Development Officer, retired.

Also among those present were:—Messrs. J. L. Moore, Railway Employment Inspector, Ministry of Transport; A. E. Butler, Assistant District Operating Superintendent, Paddington, Western Region, also representing Mr. C. W. Powell, District Operating Superintendent, Paddington, Western Region; T. Ashton and A. Seller, representing the Hotels Executive; P. N. Gray, General Manager, Aldershot & District Traction Co. Ltd.; J. L. Pearman, Secretary, Thames Valley Traction Co. Ltd.; W. A. Budd, General Manager, Southern Vectis Omnibus Co. Ltd.; A. Fenton, representing Mr. Vine, Chief Representative, British Railways, London Commercial Service.

London Area Passenger Charges Scheme

Fare anomalies and the need for a simple ticket system: Fall in British Railways gross receipts

The inquiry into the draft London Area (Interim) Passenger Charges Scheme, which opened at the Hoare Memorial Hall, Westminster, S.W.1, on May 9, was continued on May 10, when Mr. A. B. B. Valentine, Member of the London Transport Executive, gave further evidence of the disparities in fares existing today in the London area.

Mr. Valentine, replying to Mr. Lionel Heald, K.C., said that three matters urgently called for reform in the workmen's fare system, which on the whole was uneconomically low. Then, there was the illogical discrimination between different groups of passengers arising from the fact that the exceptionally low fares were in operation extensively on both British Railways and those of London Transport, and on London trams and trolleybuses, but not at all, or with only minor exceptions, on the London buses. Third, workmen's fares were available not only to passengers travelling before a specified hour, but, with no present-day justification, to persons in particular forms of employment for travelling to work at other times of the day. There was an insistent public demand for the removal of inequalities in charges for comparable journeys.

Need for a Simple Ticket System

Mr. Valentine said that there was a need for "an extremely simple" ticket system. On the central buses the children's 1d. and the 1½d. adult fares accounted for over 50 per cent. of the journeys. It was necessary to exclude return tickets as this made things quicker for the conductor. It took a conductor four seconds to issue a fare and if he had to give change it took eight seconds on the average.

It was equally necessary that there should be a quick method of issuing tickets on London Transport railways and the abolition of the ½d. from fares would help. In 1939 some 61 per cent. of the passengers travelling on 1d. tickets bought them from a machine. In 1949 the percentage of passengers who bought 1½d. fares from machines had fallen to 34, with about the same number of machines in use. The quickest way to deal with train passengers at rush hours was by using the ticket machines. Getting rid of the ½d. in fares was of direct interest to the public and not just a question of efficiency from the London Transport point of view. It was estimated that two-thirds of the users of the present monthly return tickets in the London area would be able to take advantage of the proposed new day return tickets.

Mr. Valentine, continuing, said that the reasons against the issuing of season tickets on bus services were partly commercial and partly practical. The average number of journeys by a bus season ticket holder would far exceed those made by the railway season ticket holder as buses were much more accessible. There would be a difficulty of pricing the ticket because of the greatly differing number of journeys. The only price that would give satisfaction to all would be the price for the infrequent user.

It would be quite impracticable to issue season tickets on the buses and to impose this extra duty on the conductors. It would mean an additional organisation at a substantial cost to sell season tickets.

Under London conditions, where the passenger seldom met the same conductor, there was the possibility of abuse by the transfer of season tickets without any risk of detection. The introduction of "seasons" on the railways did lead to substantial economies, but this would not be the case on buses.

Continuing his evidence on Thursday, May 11, Mr. Valentine said that, historically, the statutory obligations placed on certain railway companies and tramway undertakings, which gave rise to workmen's fares, required the provision of services before 6 a.m. at specially low fares. The word "workmen" was never clearly defined. With the passage of time it had become normal practice for workmen's fares to be available to passengers travelling before a specified time regardless of whether they were workmen or not. The Commission could find no justification for the discrimination between the level of charge for early morning travel to different groups of passengers within an area like London.

There was no doubt that of all the disparities in the passenger charges in the London area the most glaring one calling for reform was the wide difference of fares for early morning travel due to workmen's fares on trams and trolleybuses and the absence of them on buses. The position was "quite absurd" where buses and trolleybuses provided the same service along the same road using the same stopping places had different fares. The discrimination was now to be tackled as a matter of urgency because of the forthcoming abandonment of trams in South London.

The average charge per passenger-mile on London Transport railways was 1.14d. for ordinary passengers and 0.52d. for workmen. The corresponding figures on Railway Executive railways were 1.64d. for ordinary passengers and 0.69d. for workmen. There was no justification for workmen's fares on the basis that workmen's traffic was more economically carried.

Early Morning Fares

Replying to a suggestion that lower charges should be applied to early morning travel and all journeys to and from work Mr. Valentine said it would be impossible to define "work" and the Commission could not justify subsidising the cost of travel to work at the expense of other passengers. The uneconomic level of workmen's fares placed a burden on other charges. Best operating results were possible if the level of charges was the same until after the main 9 a.m. peak had passed. At present, workmen's fares, ending at approximately 8 a.m., created an artificial peak of traffic by attracting a certain amount of traffic which should travel slightly later.

Dealing with the proposed early morning return fare to replace the workmen's fare Mr. Valentine said that it involved increases for nearly 60,000 passengers a day. However, by applying the scale at the same time to buses, it represented a concession estimated to benefit 500,000 passengers daily compared with the proposed new ordinary charges, and about 250,000 daily compared with the present charges.

The intention generally was that, provided the scale was approved, on the railways of the two Executives the early morning

return fares would be introduced only for distances up to 20 miles, except where workmen's fares were in operation for longer distances, and for all journeys within the 20 miles range.

To make any headway in the task of reducing abnormally low fares, an increase of 50 per cent. was necessary in the case of fares below standard, whether workmen's fares or other sub-standard fares. With the proposed new early morning fares some anomalies in certain cross-boundary workmen's fares would be created unless special steps were taken to deal with them.

Those anomalies would arise where the existing workmen's fare for a journey across the boundary of the London area was less than the new early morning fare would be for that part of the journey lying within the London area. It might be impossible to apply the new cheap early morning fares on all country bus routes.

The London Transport Executive provided some bus services jointly or in parallel with an independent operator at co-ordinated common fares. In some cases the L.T.E. fares had not been increased because the other operator had been unable to obtain approval from the appropriate licensing authority for an adjustment in his own fares. If the new early morning fares were introduced they would undercut the existing fares of the other operators.

Dealing with a suggestion that the new early morning cheap fares should be available until 9 a.m. to avoid a differentiation between manual and non-manual workers Mr. Valentine said that if this were done it would mean a general reduction in season tickets rates and ordinary fares paid by other passengers, and that consequences on revenue would be catastrophic.

On the proposed abolition of shift workmen's tickets, he said there were over a 100,000 certificate cards in circulation for these tickets, but probably only 50,000 were used regularly. It was estimated that the withdrawal of these tickets would bring in about £80,000 in additional revenue of which £70,000 related to weekday travel. Assuming that 50,000 people were using the tickets it would mean an additional average payment of less than 7d. a week per person whether the tickets were used occasionally or regularly. Weekly tickets on Green Line coaches were deliberately higher than railway season ticket rates to prevent attracting season ticket traffic off the railways in a unmanageable volume. For the same reason there was no proposal for an equivalent arrangement to the new early morning fares.

Tilbury Line Changes

When the Tribunal resumed on May 12, Mr. Valentine turned to the proposals for dealing with fares on the London, Tilbury & Southend line. The charges on this line, he said, were very erratic as a whole, abnormally low and full of anomalies. Their erratic character had been a cause of continuous complaint. There had been considerable pressure for bringing into line the level of ordinary single fares west of Upminster, where L.T.E. electric services ran, as well as steam services from Fenchurch Street to Southend. There were "thousands" of anomalies on this line, where, for example, the fare from a certain station beyond Bromley to Fenchurch

Street was higher than the two parts of the journey divided by Bromley. The anomalies had been continued in the parallel part of the District Line of the L.T.E.

The Commission could hardly come forward with a scheme for London without consideration to a line which had been the most criticised in the area. The present situation could be traced to the provisions of the London, Tilbury & Southend Railway Act, 1852, which provided limited charging powers of $\frac{1}{4}$ d. a mile third class as compared with the usual railway charge of 1d.

Although there had been increases in charges since the Act was passed, these had usually been on a percentage basis, applied to various railways, and that was why the charges on this line were lower than elsewhere. Quoting an example of the proposed new scale Mr. Valentine said that the present single fare from Fenchurch Street to Southend Central of 5s. 8d. would be reduced to 3s. 9d. What they would lose was the cheap-day return of 5s. 8d.

The President: I take it that this is one case where commercial aspects would have to be taken into consideration in determining whether a lower day fare could be brought into operation or not?

Mr. Valentine: It is the intention in the case of fares from Fenchurch Street and East End stations to the Estuary towns to introduce a cheap day return fare at something less than twice the single fare.

Mr. Valentine said that the new scale of charges on the whole of this line were expected to produce £281,000 or an increase of 9.26 per cent.

Asked what factors might lead to a variation in the total yield of £3,691,000 which the new scheme was expected to produce Mr. Valentine said that there was some risk of loss because of the increased charge for new early morning ticket which supplanted the old workmen's ticket. He thought there would be a reduction in the volume of people who had previously bought workmen's tickets for short distances. Public transport would have to face competition from the bicycle on short distances.

While losses would not be entirely offset by the reduced charges on buses it might tempt people now using bicycles to travel on the new reduced rates on buses. He thought the new Railway Executive day return ticket at $\frac{1}{4}$ d. a mile would show an increase on Green Line coaches. It was estimated that the new reduced fares would result in a loss of over £200,000, but at the same time, more people might be attracted to travel on coaches because of the cheaper charges.

Receipts Falling

Mr. Valentine continued with the concluding section of his evidence on May 16, and in dealing with the monthly trend of traffic in the London area was asked by Mr. Heald what inference could be drawn from examining the trend on railways.

He replied that from the beginning of 1949 there had been a gradual tendency for railway receipts to fall. By the end of 1949 they had fallen by 2 per cent. as compared with 1948 and this fall had been taking place despite the gradual rise in the car mileage operated. During 1949 the fall was caused by people unable or unwilling to spend so much on transport services. Apart from buses, there had been a gradual decline in all other forms of transport, and particularly coaches.

Reviewing comparative trends on the railways Mr. Valentine said that in 1949 compared with 1948 ordinary traffic including

monthly returns and cheap day tickets fell 4.1 per cent. In making estimates for Railway Executive revenue in the London area in 1950, including the electrification to Shenfield, there was a drop of only 2.5 per cent. on 1949.

So far as the workmen's traffic was concerned, in 1949 receipts were 2.36 per cent. higher than in 1948. In 1950 workmen's traffic was expected to rise 3 per cent. above 1949. Similarly in the case of season ticket traffic, receipts in 1949 were 1.45 per cent. above 1948. It was assumed that season ticket traffic in 1950 would be 1.5 per cent. above 1949.

Mr. Valentine went on to say that from January 1 to May 6 this year the actual receipts for all forms of transport were less than had been estimated by one half of 1 per cent.—or about £90,000. In the first quarter there was good weather and at the end of March receipts were up by about £122,000. April, however, was a bad month, and one that accounted for the falling of the present figure below actual estimate.

Asked by Mr. Heald about the fall in coach receipts Mr. Valentine said that receipts were $\frac{7}{8}$ per cent. below the budget estimate for the first four months of 1950. Coach traffic was declining rapidly. Coach traffic came more in the pleasure category of transport. When people were unwilling to spend money on additional travel for pleasure or recreation it was not unexpected that coaches were first to be hit. Today people had no marginal spending power for pleasure travelling on coaches.

Replying to further questions by Mr. Heald he said his estimates for 1950 were not pessimistic; results to date showed, indeed, that they were optimistic. It was difficult to estimate what receipts would be produced by the Festival of Britain and he had not included that in his calculations because it was a "highly speculative non-recurring item." Any additional receipts would be earned with substantial additional operating costs.

This concluded the evidence by Mr. Valentine, which had occupied a little over 15 hours, and before he left the witness chair he was thanked by the President for the very clear way in which he had explained the whole position.

The next witness was Mr. R. H. Wilson, Comptroller, British Transport Commission, who, questioned by Mr. Colin Pearson, K.C., for the B.T.C., agreed that there was a "substantial reduction" in gross receipts from all British Railways from £344.8 million in 1948 to £334.1 million in 1949. Because of the newly increased freight charges, the estimated gross receipts for the current year were £345 million. Dealing with general accounts of the Commission, he said it was estimated the administrative expenses for 1950 would be £284,000, as compared with £244,000 in 1949 and £174,000 in 1948.

The "real weight" in the administrative increases was the great volume of preliminary work of the Transport Act. Great details had to be settled. Quite small fluctuations in receipts or working expenses would produce important results in terms of net revenue. The expected deficit on the revenue account for 1951 was £1.4 million. The estimated deficit for 1950 was £15.1 million, and the accumulated deficit for 1948, 1949, and 1950 was £40 million.

The reasons for the diminished deficit in 1951 compared with 1950 were a net increased yield of £10.5 million from the new railway freight charges and certain other charges, allied with the expected net increase in revenue of £3.9 million if the

proposed scheme for the London area was sanctioned.

Combined net traffic receipts of London Transport road and rail services in 1948, said Mr. Wilson, were £5,863,000, compared with estimated totals of £3,711,000 in 1949 and £2,367,000 in 1950. In 1951, the amount was calculated at £1.7 million only. This was because of increased expenses caused by the extra tax on petrol and oil, the development of new services, and the decrease in Green Line coach takings. In 1951, the total revenue requirements from passenger operations in the London area was £82.6 million.

At present the gross receipts in 1951 at prevailing charges were £76.6 million, and the scheme under consideration, if approved, would produce a further £3.9 million, giving a total of £80.5 million.

Electric Rolling Stock for Estoril Railway, Portugal

(Concluded from page 573)

when the driver places his brake handle in the "release" position. This motor is a two-pole machine run direct from the 1,500 V. supply. It is totally enclosed, and mounted on the same bed-plate as the exhaustor. The motor is designed to give 3 h.p. continuously at 600 r.p.m., and 6 h.p. at 1,200 r.p.m. for short periods.

Sanding is by means of a foot-operated switch in each driver's cab. This energises electro-pneumatic valves in the sand boxes adjacent to all driving axles in a train, the appropriate valves for the direction of running being selected automatically by the position of the reverser.

Trains of the new stock will be made up of a motor coach hauling two or three trailers, or two motor coaches marshalled at each end or at the head of four trailers. Provision for multiple operation is made by means of receptacles for control line jumpers at both ends of motor and trailer coaches. There is a separate set of jumpers and receptacles for the lighting supply to the trailers.

The exterior of the rolling stock is finished in blue below the waist, ivory above, with aluminium-colour roof.

Principal Contractors

The following firms, as sub-contractors, supplied materials and fittings for the motor coaches and trailers:—

Insulation and cork flooring	J. W. Roberts Limited
Window pans and window gear	Hallam Sleigh & Cheston
Glass and mirrors ...	Pilkington Bros. Ltd.
Alpax doors and sills ...	Lightalloys Limited
Plastic interior finish	Thomas De La Rue & Co. Ltd., and Saro Laminated Wood Products Limited
Metallic fittings and locks...	Joseph Kaye & Sons Ltd., and John Levick Limited
Airvac ventilators ...	Greenwoods & Airvac Ventilating Co. Ltd.
Seats and blinds ...	G. D. Peters & Co. Ltd.
Teloc speed indicator	Hasler Telegraph Works
Electric light fittings	J. Stone & Co. Ltd.
Transfers ...	Tearne & Sons Ltd.
Helical bolster springs	Turton Bros. & Matthews Limited
Roller bearing axle-boxes	British Timken Limited
Wheels and axles ...	Owen & Dyson Limited
Bogie leaf springs ...	Thos. Firth & John Brown Limited
Vacuum brakes and ex-hauster	Westinghouse Brake & Signal Co. Ltd.

Staff & Labour Matters**B.T.C. Police Claim Award**

Revised conditions and allowances, with uniformity as between the police of the Railway, London Transport and Docks Executives

Mr. G. C. Honeyman, Independent Chairman of the *ad hoc* committee to consider the claim of the British Transport Commission police force, which was referred to in our March 24 issue, published his findings on May 10 and comes to the conclusion that the Federation has not established the general principle that the police forces employed by the three Executives should have rates of pay and conditions analogous to those enjoyed by the civil police. On the evidence submitted there was no general case for an increase in the rates of pay of police staff in the employ of the B.T.C.

Uniformity as between the police of the three Executives should be based on the pay and conditions now obtaining for the Railway Executive Police Force, which comprises 96 per cent. of the staff affected by the award. Details of the findings are as follow:—

Hours of Duty

The standard hours of duty shall be 48 per week of six days one of which may be Sunday. The normal duty shall be of 8 hr. and where duties are performed in one turn of 8 hr. a meal break of thirty minutes shall be allowed between the third and fifth hours of duty. Each officer shall be allowed at least 8 hr. rest between the termination of one tour of duty and the commencing of the next tour of duty except in an emergency.

The normal period of duty may be extended by, or under the directions of the Chief of Police on any particular day or for any specified period as respects any member or members of the force, and nothing in the terms of service shall affect the obligation of any officer to attend at any time to any matter to which it is his duty to attend.

Overtime and Sunday Duty

(a) Constables, sergeants and inspectors not on rostered duties: payment shall be made of a commuted allowance of 12½ per cent. to cover overtime and Sunday duty.

(b) Constables, sergeants and inspectors on rostered duties: time worked in excess of the rostered hours shall be paid for at ordinary time rates. Each day shall stand by itself for the purpose of calculation of overtime. Time worked on Sundays shall be paid for at ordinary time rates. Provided that when a man, after returning home is recalled for any specific duty including attendance at court he shall be paid for one hour at ordinary rate in addition to the actual period of duty and where a man having worked a full tour of night duty is recalled to duty before 3.30 p.m. he shall be paid for not less than three hours duty.

When a member of the force of the rank of constable, sergeant or inspector on rostered duty is required to perform duty on a day which would otherwise have been a rest day, he shall be paid at the rate of time-and-a-half for such day.

Every member of the force of the rank of constable, sergeant or inspector shall so far as the exigencies of duty permit be granted a day's leave on Good Friday and Christmas Day (in Scotland January 1 and 2). If a man on rostered duty is required to work between midnight and midnight on

such days, time so worked shall be paid for at the rate of time-and-a-half.

The following annual leave with pay shall be granted after twelve months' service: constables 15 days; sergeants 18 days, and inspectors 21 days.

A member of the force in the calendar year in which he is appointed shall after the completion of six months service be granted annual leave at the rate of one-twelfth of the above specified periods for each complete month of service in that year.

The following scales of pay shall apply:—

Constables (20 years of age and over):

Year	Males per annum £	Females per annum £
1st	310	275
2nd	320	285
3rd	330	295
4th	340	305
5th	350	315
6th	360	325
7th	370	335

Sergeants:	per annum £	per annum £
1st	390	350
2nd	398	358
3rd	406	366
4th	414	374
5th	422	382
6th	430	390

Inspectors (male):

Year	Class 3 per annum £	Class 2 per annum £	Class 1 per annum £
1st	445	485	525
2nd	451	491	531
3rd	457	497	537
4th	463	503	543
5th	470	510	550

(With regard to inspectors, the Federation sought the abolition of the present rank of Inspector Third Class and the re-classification of officers at present holding that rank to the appropriate Second Class rank. They also sought the establishment of a differential rate for inspectors in London. Mr. Honeyman finds that neither claim is established.)

Constables, sergeants, and inspectors who are not supplied with uniform shall be granted an allowance of £26 per annum. Any officer required to do duty in plain clothes for not less than one complete tour of duty shall be paid one-sixth of the weekly rate for each tour.

Detective Allowance

A member of the Transport Commission Police Force who is engaged in detective duties shall be paid, while so employed, a detective allowance of ten shillings per week.

This allowance is the monetary equivalent of what under existing conditions is paid to officers holding detective rank in the London Transport Executive Police. It was strongly urged that such detective ranks should be retained in the London Transport Executive and reinstated in the case of Railway Executive Police.

Staff required to undertake duty temporarily in a higher rank (or in the case of inspectors, in a higher class) other than in a vacancy due to sickness or annual leave and undertaking the full duties and responsibilities of the higher position shall be paid at the minimum rate applicable to the higher position for the time so occupied. Staff required to undertake such higher grade duty temporarily in a sickness vacancy shall be paid similarly for any period in excess of four weeks.

The undermentioned allowances to

be made as compensation for expenses necessarily incurred for refreshments or lodging under the following circumstances:—

(i) When men who usually obtain their meals at their home station are prevented on any day by the requirements of the Commission from taking their meals in the ordinary way and are, in consequence, necessarily put to expense in obtaining meals.

(ii) When men are required by the Commission in the performance of their duties to be away from their home station which expression may in appropriate cases include a station to which they have been temporarily transferred.

Rank	Per day or turn of duty s. d.	Per night when lodging away from home s. d.	Per day and night when lodging away from home s. d.
Uniform constables ...	4 0	10 0	14 0
Detective constables, Uniform sergeants, and Detective ser- geants	5 0	12 0	17 0
Inspectors, Class 3 ...	6 0	15 0	21 0
Inspectors, Class 1 and 2	6 0	16 0	22 0

In any case where the standard hours of duty are so extended by the requirements of the Commission as to necessitate extra expenses in obtaining additional meals, a further allowance to cover such extra actual expenses shall be made at the rate of one shilling for each completed hour.

Actual expenditure in respect of tram fares or other purposes to be allowed if certified by the Chief of Police as necessary in connection with the Commission's business.

If the Chief of Police is satisfied in any particular case that the amount of the allowances specified above is not sufficient to cover the actual expenses necessarily incurred, he may authorise payment of the difference.

If the Chief of Police is satisfied in any particular case that the amount of the allowances specified above would be excessive, having regard to the additional expenses necessarily incurred, he may direct that the amount of the allowances shall be reduced to such an amount as he determines, not being less than the amount of such expenses.

If a member of the force is temporarily transferred or engaged away from his usual place of duty for a period exceeding one week he may, if the Chief of Police is satisfied that the allowances specified above would be excessive, be granted in lieu thereof a weekly allowance at such lower rate as may be necessary to cover his reasonable expenses.

Commuted Lodging Allowance

Married staff and single staff with dependants who are transferred from one place to another (otherwise than for their own convenience) and are unable to obtain housing accommodation shall be paid a commuted lodging allowance as follows: constables £2 weekly; sergeants and Inspectors Class 2 and 3 £2 5s. weekly; and Inspectors Class 1 £2 10s. weekly.

In respect of the following items Mr. Honeyman has found that the claim has not been established: (a) boot allowance; (b) London allowance; (c) removal expenses

(i.e. any claim to depart from the existing railway practice as to removals by salaried grades); (d) rent allowance and compensatory grant; and (e) car, cycle, and telephone allowances.

The award generally is operative from May 10, 1950, or from commencement of the first full pay period after May 10, with certain provisions retrospective to January 1.

Railway Catering Staffs

The N.U.R. Catering Trades Conference, representing hotel, refreshment-room and dining-car staffs, meeting at Southport on May 5-7, passed a resolution declaring that it was its policy to leave the Catering Wages Board as soon as possible and to negotiate separately with the Hotels Executive. There was to be a meeting with the Hotels Executive on May 22.

Traders' Traffic Conference, Hull Meeting

The annual meeting of the Traders' Traffic Conference was held at Hull on May 8-10. Lieut.-Colonel H. R. Caulfield-Giles, Chairman, presided.

The conference opened with a steamer trip from Hull to Immingham Docks, followed by luncheon at the Royal Station Hotel, Hull, both at the invitation of the Railway and Docks & Inland Waterways Executives. Members of the party also visited the docks at Hull, the marshalling yards at Hessle, and automatic signalling at Hull Paragon.

The annual dinner was held in the Royal Station Hotel. Those present included: the Lord Mayor of Hull, Alderman J. Henson; the Sheriff of Hull, Lieut.-Colonel R. Alec-Smith; Mr. E. W. Arkle, Commercial Superintendent, and Mr. L. Ballan, District Goods Manager, Hull, Railway Executive, North Eastern Region; Mr. S. A. Finnis, Chief Docks Manager, Hull; Major F. S. Eastwood, Regional Transport Commissioner, North Eastern Region; and Mr. Sangwin and Mr. Holroyd, of Ellerman's Wilson Line Limited.

The toast of the city and trade of Kingston-upon-Hull was proposed by Mr. H. Hodson, Secretary of the Hull Distillery Co. Ltd., and was replied to by the Lord Mayor. The Chairman proposed the toast of the guests; he gave a brief review of transport questions during the past year, and more particularly the discussions with the British Transport Commission on the draft Charges Scheme; increased railway charges; the petrol tax and purchase tax on commercial goods vehicles; and the position of "C"-licence holders; and he emphasised that with rights go responsibilities.

The conference held its business meeting on May 10. Members afterwards took luncheon in s.s. *City of London* as guests of Ellerman's Wilson Line Limited.

MILD STEEL CASTINGS OF HIGH MAGNETIC PERMEABILITY.—The British Standards Institution has recently published B.S.1617: 1949, *Mild Steel Castings of High Magnetic Permeability*, one of a series of standards for steel castings for general engineering purposes, intended for use where special magnetic properties are required for electrical applications. Copies may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 2s., post free.

Parliamentary Notes

Railway Freight Charges Increase

Minister of Transport defends the increase in railway rates and the work of the Transport Commission

The House of Commons on May 10 agreed to the Government regulations embodying the proposals for a 16½ per cent. increase in railway freight charges. An Opposition motion "That an humble Address be presented to His Majesty praying that the Regulations dated May 1, 1950, be annulled" was defeated by 306 votes to 283. Four other prayers for the annulment of the various Regulations were not pressed to a division.

Sir David Maxwell Fyfe (Liverpool, West Derby—C.), who opened the debate, said that the proposed increases must be contemplated as another upward push in the inflationary spiral of rising costs. Unless the Government was driven to this course not only by weighty but by irresistible reasons, it should not be taken. The Opposition, he continued, felt that no increase should be introduced until they had had a rapid inquiry, by a small body of practical experts, into the possibility of economies, of increased efficiency and increased traffics. He was not suggesting a general inquiry into reorganisation, but into certain clear and specific proposals for the reduction of expenses. To wait four or five years for the implementation of a new charging system, and an unspecified period beyond that for a hypothetical integration, was to ignore the red light of our economy today, which was that Marshall Aid ended in 1952.

Re-establishment of Passenger Business

They must have further inquiry into the numbers of the staff. In addition, there were three other points. One was that, to increase average receipts per loaded passenger train mile meant putting more people into fewer trains; in other words, it meant reconsidering the holiday programme of last year. The growth of the deficit in 1949, compared with that in 1948, was of about £15 million. That was due to a substantial fall in the profitability of passenger-train working, because, in 1948, the average receipts per loaded coaching train mile had been 13s. 9d. and for 1949, as far as one could judge, it would turn out at less than 12s. 4½d. The Minister could not say that was due to factors outside the control of the Commission. It was due to a deliberate policy, pursued, he was sure, in all good faith, but nevertheless disastrous from a financial point of view. The Opposition said that the policy should now be directed primarily towards the re-establishment of the profitability of the passenger side, rather than to imposing an additional burden on industry.

His second point was that the Minister ought to increase the commercial knowledge of the Commission by appointing someone with similar qualifications to take the place of the late Lord Ashfield; and his third was that the railways should be decentralised.

The general excuse, Sir David Maxwell Fyfe continued, was increased costs, but, if they compared the increases in losses with the increase in costs, they found that the figure of losses was £5 million for 1948, £21 million for 1949, and £31 million for 1950, yet there had not been any corresponding increases in prices from 1948 to 1950 to cause such an increase in losses. Members on the Ministerial side of the House were always driving home

and making the most of three trends at the present time. One was production, which they said had been increased by 34 per cent., the second was the number of persons in work, and the third was productivity, which they said was increasing at an annual figure of 4 or 5 per cent. The puzzle was, if all those trends were rising, why was it that less freight should be carried and fewer passengers travel? A suggestion that the answer was "C" licences would not do; in any case, the Government had taken fiscal steps, by a duty on petrol and a tax on lorries, to make it more difficult and more expensive to operate "C" licences. Figures given by the Minister the previous week showed that the number of lorries owned by the Road Haulage Executive had gone up in the past few months from 19,000 to about 40,000, yet nothing was allowed for in increase of receipts from that part of the Commission's activities.

Another point about which the House required to hear was why a flat rate increase was proposed, and no differential applied. They ought to consider now what changes in classification and charging were going to attract traffic to the railways. What they wanted was a system of rates which would encourage profitable, and discourage unprofitable, traffics. He believed that things which had a low loading factor should be discouraged by higher rates, and that profitable traffic with a high loading factor be allowed to remain at the present level.

Mr. C. C. Poole (Birmingham, Perry Bar—Lab.) said the Tribunal had stated that the problem was so urgent that it brooked no delay. How long did anyone think a committee would take to go into the operations of the British Transport Commission and to present a report, which would only have the value of the report they had had as a result of all those sittings by very responsible and experienced people.

Mr. Geoffrey Wilson (Truro—C.) contended that, apart from economies, many things could be done to make the railways pay. Everything should be done to encourage those forms of traffic most likely to go by rail. One of those was traffic having a regular delivery, so that anything which could make for the smooth running of trains, for their punctuality, and for the smooth handling of traffic on platforms would be an improvement to be encouraged. Before the House agreed to the charges it must be satisfied that the whole matter had been tackled with energy and imagination, and that the railway losses were not being accepted with fatalistic resignation.

Take-over Value of Railways

Mr. Percy Morris (Swansea, West—Lab.) said there was a great measure of decentralisation on the railways now. The regional officers themselves had every authority to exercise initiative and enterprise in developing their services.

Many persons held the view that the Government had paid far too much for the railways, and the railwaymen resented the fact that they had to work hard to raise the revenue of £24 million per annum for the stockholders alone. The Government should make a fresh estimate of what

the railways had actually been worth when they took them over, and charge the industry with that amount of revenue to earn.

Sir Ralph Glyn (Abingdon—C.) said he felt he could not vote in support of the Prayers. It was essential for the House to face the issue involved in the problem of British transport. It would not be solved by this 16½ per cent.; that was merely a stop-gap, necessary to stop the rot and build a new rates structure. He advocated a new rates structure on a new basis; the whole of the rates basis was on tonnage and not bulk. It would take six or seven years to get a new rates structure out, because, when they had passed the earlier Act, it had taken from 1923 until 1928 before the rates structure had been altered. They might do it much quicker if they swept away all the exceptional rates and built up a new structure based on bulk and tonnage and the contribution which could be made in the bulking of traffic to central points and distributing direct to customers' own doors by road.

Mr. Peter Thorneycroft (Monmouth—C.) said he did not think the case against the additional charges had been exaggerated. It meant another 2s. 6d. a ton on domestic coal, another £2 million on gas and £1½ million on electricity. They ought to be told how those were going to be carried. They knew the farming industry had to carry £2 million, and that the steel industry had suffered an increased cost of 10s. a ton, which it was carrying itself. He hoped it would not be only private enterprise, like the farmers and the steel makers, who would carry the increases in rail charges, and that it would only be the nationalised industries which handed them on to the consumer.

Mr. Alfred Barnes (Minister of Transport) said that Parliament must accept full responsibility for the executive control of the railways during the war; it had not been the directors who controlled them. No attempt had been made during that period to adjust the charges or the affairs of the railway industry with the rise in prices which always occurred during war. The traffic which had sustained the economy of the railways during and immediately after the war had not been normal.

Referring to the suggestion by Sir David Maxwell Fyfe of an inquiry by a committee of practical men experienced in running railways, Mr. Barnes said they had got them now on the Railway Executive, and asked if Sir David proposed that they should appoint another body of experts to examine the activities of an existing body of experts? He accused the Opposition of desiring a policy of delay so as to place the railways in an increasing difficulty, so that it could point to the failure of nationalisation.

The increase of 16½ per cent., and the revenue of £26 million it was estimated to yield, was not to liquidate the whole of the existing loss of the Commission. It was for the purpose of safeguarding the situation, to secure sufficient revenue to prevent the cumulative loss destroying the whole efficiency of the scheme.

He was confident that, ultimately, they got a sounder economic system in this country by the fierceness of the debates, and by bringing the searchlight of public criticism to bear on the administration of any public service, than they would if they attempted to bury it in the form of a subsidy. In this case the subsidy would take the form of the Treasury meeting the interest charges on the compensation given to railway shareholders. He was satisfied that every time railway workers attempted to improve their con-

ditions to keep them in line with the general movement they would find that the effects of a subsidy, its cost on the Budget and the fact that it represented the payment of interest on the capital item of compensation, would have a very injurious effect on the railways.

No evidence had been submitted to the Consultative Committee to prove the inefficiency of the Transport Commission or the Railway Executive. Members had no right to demand an inquiry into the administration of a public body unless they could produce some evidence that an inquiry was desirable. The total expenses of British Railways had remained relatively steady—£311 million in 1948, £312 million in 1949, and (estimated) £314 million for this year. The total passenger and freight receipts in 1947 had been £349 million, and in 1950 they were estimated at £319 million. From 1947 to 1950 Government traffic had declined by £21 million.

In the period during which, owing to investment control and restriction, the railways had not been able to modernise their service and build the coaches they required, and when, as a result of the fuel crisis in 1947, they had had to cut services by 10 per cent., scheduled public road transport services had been expanding by 7,300,000 miles a week.

Mr. Barnes welcomed the decision of

the steel industry to carry the charge of £6 million without passing it on, and appealed to industry generally to follow that example.

The total income the Commission expected to get from the 16½ per cent. increase in freights, the increase in its dock charges, raising them from 25 to 50 per cent., and the increase of 75 to 100 per cent. in the other dues and charges, was £27,300,000, of which the railways were expected to yield £26,300,000. In the last two years the Transport Commission had reduced its staffs by approximately 30,000 individuals, and the Commission, in conjunction with the unions, would press on steadily and continuously with a view to securing the utmost efficiency in the use of manpower in the industry. During the past two years, in 1948, £20 million had been expended on overtaking the arrears in maintenance, and, in 1949, a further £15 million had been expended on that policy.

The average train load in 1938 had been 125 tons, and in 1948 156 tons. The average wagon load under private enterprise had been 5.55 tons, and under the Commission had improved to 6.48 tons. In 1933 there had been 33 per cent. empty running of wagons; under the Commission that was down to 27 per cent.

Lord Ashfield Memorial

On May 16, Mr. Alfred Barnes, Minister of Transport, performed the unveiling ceremony of a memorial to the late Lord Ashfield, who was a Member of the British Transport Commission and previously Chairman, London Passenger Transport Board. The memorial is at the east end of London Transport building at 55, Broadway, Westminster. It consists of a stone plinth on the exterior wall, bearing a bronze plaque of Lord Ashfield's head by Mr. Herbert W. Palliser, the sculptor. The tablet is inscribed "The Rt. Hon. Lord Ashfield, P.C., 1874-1948. Creator of London Transport." The architectural setting for the plaque was designed by Messrs. Adams Holden & Pearson, Consulting Architects, who were the original architects of 55, Broadway.

Mr. Barnes was introduced by Lord Latham, Chairman of the London Transport Executive. Lady Ashfield, old friends and associates of Lord Ashfield, guests associated with transport and industry, and representatives of London Transport staff and of trade unions, accepted invitations. Those who were present at the ceremony included:—

Members of the British Transport Commission: Sir Cyril Hurcomb, Lord Rusholme, Sir William W. Wood.

Members of the London Transport Executive: Lord Latham, Mr. A. B. Valentine, Sir Edward Hardy, Mr. John Cliff, Mr. L. C. Hawkins, Mr. A. H. Grainger.

Chairmen of Other Executives: Sir Eustace Missenden, Major-General G. N. Russell, Mr. George Cardwell, Sir Reginald Hill.

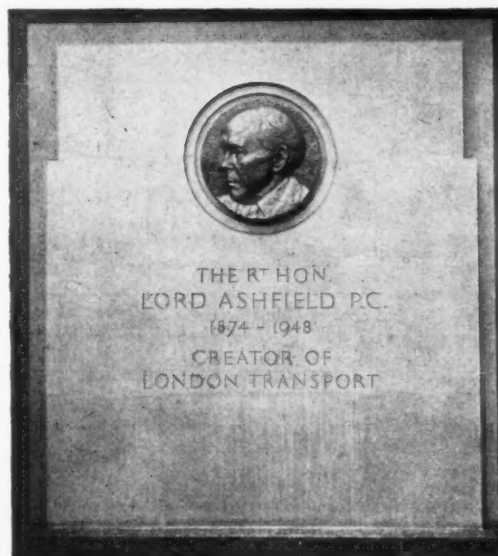
Chief Officers of the British Transport Commission: Messrs. Miles Beevor, R. H. Wilson, J. H. Brebner.

Chief Officers of the London Transport Executive: Messrs. C. G. Page, G. F. Sinclair, F. A. A. Menzler, G. Dodson-Wells, A. Bull, Dr. L. G. Norman, Messrs. P. Croom-Johnson, S. G. Jones, P. G. James, F. G. Maxwell, J. B. Burnell, B. H. Harbour, W. S. Graft-Baker, A. A. M. Durrant.

Ex-Members of the London Passenger Transport Board: Sir Patrick Ashley Cooper, Sir Geoffrey Vickers, Sir Gilfrid Crag.

Ex-Directors of the Underground Group of Companies: Mr. Evelyn Baring, Sir Ernest Clark, Mr. C. W. Reeve.

Among other guests were: Lord McGowan, Lord Beaverbrook, Sir Theodore E. Thomas, Viscount Kemsley, Messrs. W. Surrey Dane, H. W. Palliser, R. J. Hitchcock, Brigadier General Sir Osborne Mance, Mr. H. Dalton, Sir Gilmour Jenkins, Messrs. Evan Evans, A. J. Webb, W. A. Agnew, Colonel E. T. Brook, Mr. Ernest Davies.



Notes and News

Steel Rails and Fastenings for Queensland Railways.—Tenders are invited for steel rails and fastenings required by the Queensland Railways. See Official Notices on page 583.

United Railways of Havana.—Workers on the British owned United Railways of Havana in Cuba have begun workshop strikes and a traffic slow-down as a form of protest against mooted nationalisation of the railway.

Drawing Office Executive Assistants Required.—Applications for two Executive Assistant posts in the Civil Engineer's drawing office are invited by the London Transport Executive. See Official Notices on page 583.

Railway Mechanical Engineer or Draughtsman Required.—A Consulting Engineers' London Office requires a railway mechanical engineer or draughtsman, preferably with experience of carriage and wagon work. See Official Notices on page 583.

Diesel-Electric Locomotives for Western Australia.—The Western Australian Government Tender Board is inviting tenders for 48 main-line diesel-electric locomotives for use on the Western Australian Government Railways. See Official Notices on page 583.

British Railways Exchange Staff with French and Dutch Railways.—Exchange visits between small groups of specially selected younger railwaymen of British Railways and the French and Netherlands railways have been arranged by the Railway Executive to take place this year. A similar exchange took place between the British and French Railways last year. Each of the groups consists of four officials representing the operating, commercial, civil engineering, and mechanical and electrical engineering departments respectively. The Anglo-Dutch exchange was for a period of four weeks; the Dutch officials

arrived in England on April 17 and returned on May 13. The accompanying illustration of some of the Dutch officials with Sir Eustace Missenden, Chairman of the Railway Executive, shows, left to right: Messrs. B. Van Bilderback, C. E. Douwes Dekker, H. J. Locke, Sir Eustace Missenden, and Messrs. J. P. A. Van Balleyogen De Jong, and P. Boender.

Vacancies for Engineering Assistants.—The London Transport Executive invites applications for three engineering assistant posts in the drawing office of the Civil Engineer (Maintenance). See Official Notices on page 583.

Nitrate Railways Tariffs.—The Chilean Government has authorised the Nitrate Railways Company to increase tariffs by 23 per cent., which, according to the local management, will exactly compensate for the increased wages of workmen ordered by the labour board.

Collision Near Preston.—More than 40 persons were injured when a Preston to Southport passenger train came into head-on collision with a light engine at Penwortham, near Preston, London Midland Region, on May 13. There were 13 stretcher cases and some 30 persons received minor injuries; eight of the passengers were detained in the Preston Royal Infirmary.

Shorter and More Frequent Trains on Bakerloo Line.—A move to increase the frequency of trains on the London Transport Bakerloo Line in the non-rush hours will be brought into operation on June 5. The present service in the non-rush hours, consisting of a train approximately every four min. will be replaced by a service of trains every 2½ min.; length of the trains, instead of seven cars, will be four cars. The new system of short trains will be in operation between 10 and 4 in the afternoon, and will also operate between 7.30 and 11 in the evening when the frequency of trains will be increased from the present four min. to three min. On Saturday

shorter trains will run at the improved frequency of 2½ min. between 6 p.m. and 10 p.m. The system of shorter and more frequent trains in the non-rush hours was in use all over the Underground until 1940, but was discontinued due to war conditions; extension of the new Bakerloo type of service to other lines may be introduced later.

British Railways Summer Timetables.—In the summary of British Railways summer timetable in our May 5 issue, it was stated that the North Eastern Region timetable was prepared on the same principle as that of the London Midland Region, but with greater success because of the larger size of type used on the time sheets. We are informed, however, that the North Eastern Region time book was produced from a separate set of type by letterpress, and had no connection with the photo-offset process.

R.H.E. Divisional Conferences.—Divisional conferences under the chairmanship of the Divisional Managers of the Road Haulage Executive were held on May 13 and 14 in the South Eastern and South Western Divisions at London and Bournemouth respectively. In addition to discussions on day-to-day business the meetings were addressed by Major-General G. N. Russell, Chairman, R.H.E., and Chief Officers from headquarters on policy matters. To date approximately 1,000 of the managerial and technical staff have attended such conferences.

United Railways of Havana.—Regarding the sale of the United Railways of Havana, as recorded in our issue of April 21, Mr. R. G. Mills, Chairman of the United Railways of Havana & Regla Warehouses Limited, made a supplementary statement after the annual general meeting on April 26. It was understood, said Mr. Mills, that the Cuban cabinet on April 20 had passed a resolution purporting to facilitate transfer of the railway and to acknowledge the debt of the Government of Cuba to the company in respect of expropriations. He understood also that possible purchasers were confident that the President would sign a decree satisfactory to their interests; this information, however, must be treated with caution.

York Railway Institute Dramatic Society.—The third and final performance by York Railway Institute Dramatic Society of the three-act play "The Bat" was given on May 5 to a full house, which included Mr. H. A. Short, Chief Regional Officer, North Eastern Region, and Mrs. Short; Mr. Colin Cooper, Regional Staff Officer, and Mrs. Cooper; and Mr. F. H. Petty, Motive Power Superintendent, and Mrs. Petty. A smooth interpretation of the play resulted in an appreciative final curtain, and more than the average number of bouquets. The Society, the members of which are drawn from all departments, has produced four plays this season; members who have contributed to its success include Mr. S. C. H. Fossett, Mr. W. E. G. Ings, and Miss M. A. Jefferson.

Transport Charges in Northern Ireland.—In the Northern Ireland Parliament last week the Minister of Commerce was asked whether he had been consulted by the Ulster Transport Authority before the announcement of the recent 20 per cent. increase in freight charges to take effect from June 1, 1950; whether he was aware of the hardship which would be caused to industry and trade by the increase; and whether, in view of the admission by the Authority that its freight services were



Sir Eustace Missenden, Chairman of the Railway Executive, with the Dutch railway officers who visited this country recently (see paragraph above)

OFFICIAL NOTICES

Western Australian Government Railways

DIESEL-ELECTRIC LOCOMOTIVES

TENDERS are invited by the Western Australian Government Tender Board for 48 Main-Line Diesel-Electric Locomotives for use on the Western Australian Government Railways. Conditions of Contract, Drawings and Specifications are available on application at the Office of the Agent-General for Western Australia, Savoy House, 115-116, Strand, London, W.C.2. Tenders will close at 2.15 p.m. on Monday, July 17, 1950, at the Office of the Agent-General for Western Australia.

LONDON TRANSPORT EXECUTIVE invite applications for three Engineering Assistant posts in the Drawing Office of the Civil Engineer (Maintenance); the duties involve the design of railway permanent way layouts, general arrangements and details. Applicants should have experience of track maintenance and a good knowledge of the design of points and crossings and of track components. Salary range for the posts is £500 to £560 per annum; commencing salary according to qualifications and experience. The appointments are subject to a medical examination. On completion of a satisfactory probationary period, the selected applicants would, where eligible, be expected to join a Contributory Superannuation Fund. Canvassing, directly or indirectly, will disqualify. Applications giving full particulars of age, experience and qualifications should be sent within fourteen days of the appearance of this advertisement to the Staff Officer (F/EV 132), LONDON TRANSPORT EXECUTIVE, 55, Broadway, Westminster, S.W.1. For acknowledgment enclose addressed envelope.

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 13½ years. Cloth, 8½ in. by 5½ in., 91 pp., illustrated, 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

being run at an enormous annual loss, he would consider the introduction of legislation which would restore full freedom to private hauliers to carry goods for hire or reward. The Minister replied: "The Transport Authority was good enough to give me prior information of its intention to increase its freight charges, but the Authority is not required to consult me before reaching a decision of this kind. I am, of course, aware that an increase in these transport charges will add an additional burden upon the general costs of industry and commerce. A time may come when the Government may be obliged to consider the problem referred to in the last part of the question, but it is a matter which would require very careful examination before a decision could be reached."

A. Reyrolle & Company.—The trading profit for 1949 of A. Reyrolle & Co. Ltd., at £1,356,954, shows an increase of £599,365 over the preceding year. Sums of £100,000 (£50,000) are allocated to development expenditure, of £200,000 (£25,000) to general reserve, of £75,000 (£65,000) to stocks and work in progress, and of £75,000 (£40,000) to renewals. A final dividend is recommended of 7½ per cent., making 15 per cent. for the year, as opposed to 12½ per cent. paid for 30 years past.

London Midland Region Orchestra.—At the London Midland Region (London) Orchestral Society vocal and instrumental concert held on May 12, with which the society had to sever its association with the former shareholders' meeting room at Euston Station and moved to the more modern and comfortable large hall at Friends House in Euston Road, the programme included works by Beethoven, Mendelssohn, Suppé, Chabrier, Verdi, Strauss, and Weber. The orchestra was under its honorary conductor, John Grindley; leader, George Elmitt. Choral items were rendered by Douglas Hemmings (baritone) and the Douglas Hemmings Ladies' Choir, accompanied by Robert Measures on the piano. Approval of the popular and well-balanced pro-

WANTED: Back Numbers *The Railway Gazette*, February 11, 1938; February 2, 1940.—Box 728, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

DRAUGHTSMEN, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 719, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

LARGE Manufacturers with rapidly increasing connection on all types of railway rolling stock require Sales Departmental Manager. Excellent opportunity in an expanding business for man with wide technical and commercial knowledge of railways. Permanent post with Pension Scheme.—Box 715, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

REQUIRED for Consulting Engineers' London Office, Railway Mechanical Engineer or Draughtsman, preferably with experience of carriage and wagon work. Must have intimate knowledge of technical Spanish. Position might suit retired railway officer. Please give full particulars of training, experience, age, etc., to Box 732, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BRITISH WORK ON PERSIAN RAILWAYS. The achievements and difficulties of the R.E.s during the 15 months in which they laid the foundation for effective aid to Russia. Reprinted from *The Railway Gazette*, February 2 and 16, 1945. Price 1s. Post free 1s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages, 9 in. by 12 in., fully illustrated. Paper cover, 5s. By post 5s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Queensland Railways

TENDERS, appropriately endorsed, are invited for Steel Rails and Fastenings, required by the Queensland Railways. Specifications, schedules, general conditions and tender form, may be obtained from the Agent-General for Queensland, Queensland Government Offices, 409-410, Strand, London, W.C.2. Tenders are returnable either at the Office of the Commissioner for Railways, Brisbane, or to the Agent-General's Office in London not later than 2.30 p.m. on June 26, 1950.

LONDON TRANSPORT EXECUTIVE invite applications for two posts in the Civil Engineer's Drawing Office:—(a) An Executive Assistant to take charge of a section of the office concerned with the design of bridges and structures of steel, both welded and riveted, and of reinforced concrete. Applicants should have had a sound theoretical training with some years of practical experience in the design and execution of works and in the drawing up of bills of quantities and specifications and the preparation of estimates. (b) An Executive Assistant for work connected with the design of railway permanent way layouts, general arrangements and details. Applicants should have experience of track maintenance and a good knowledge of the design of points and crossings and of track components, and should be capable of supervising and instructing junior staff in such design. The salary range for both posts is £600-£700 per annum; commencing salary according to qualifications and experience. The appointments are subject to a medical examination. On completion of a satisfactory probationary period, the selected applicants would, where eligible, be expected to join a Contributory Superannuation Scheme. Canvassing, either directly or indirectly, will disqualify. Applications giving full details of age, training and experience should be sent within 14 days of the appearance of this advertisement to the Staff Officer (F/EV 131), LONDON TRANSPORT EXECUTIVE, 55, Broadway, Westminster, S.W.1. For acknowledgment, enclose addressed envelope.

gramme was evident from the appreciation shown by the audience at the conclusion of the concert.

Railway National First-Aid Competition.—The 1950 Finals of the British Railways and London Transport (Railways) National First-Aid Competition will be held, under the auspices of the St. John Ambulance Association, at Central Hall, Westminster, London, today, May 19, commencing at 9.15 a.m. Thirteen teams of men (two from each railway Region and one from the London Transport Executive) and seven teams of women (one from each railway Region and one from the London Trans-

port Executive) will compete for the championship trophies and prizes presented by the St. John Ambulance Association. Lady Missenden, wife of Sir Eustace Missenden, Chairman of the Railway Executive, will distribute the trophies and prizes at about 4 p.m.

Birmingham & Midland Motor Omnibus Company.—That the B.T.C. last year had contented itself with acquiring by voluntary negotiation the share capital of certain road passenger undertakings was remarked on by Mr. J. S. Wills, Chairman of the Birmingham & Midland Motor Omnibus Co. Ltd., at the annual meeting

L.M.R. Ambulance Competition



Mrs. Elliot, wife of Mr. John Elliot, Chief Regional Officer, London Midland Region, presenting the trophy to the Wolverton team after the L.M.R. ambulance competition on May 5 (see last week's issue)

on April 17. Transport operators, he said, could not complain of this; for as long as the companies which had been acquired remained in their present shape as separate entities subject to the licensing authorities, they would continue to give the same services as before. Now that the majority of the electorate had voted against nationalisation the B.T.C. was not bound to introduce the principle of compulsory acquisition into any future Area Scheme. The only substantial competition in passenger traffic was between public service road vehicles and the railway on one side, and private cars on the other: the total number of seats in buses, trams and so on, was about 3,200,000, in railway (including London Transport) carriages 2,400,000, and in private cars 8,000,000.

British Automatic Company.—A dividend of 6 per cent. for 1949, the same as last year, is recommended by the directors of the British Automatic Co. Ltd. The group profit, after deduction of all charges, including £55,732 tax (against £52,650), is £34,656 compared with £19,694 in 1948.

Southern Region Lecture & Debating Society.—At the annual general meeting of British Railways, Southern Region, Lecture & Debating Society, which followed the prize essay presentation referred to in our April 14 issue, a number of appointments were made consequent on the resignation of Messrs. F. L. Back, I. C. Marshall, and J. A. R. Turner from their respective offices. For the 1949-50 session the following officers were appointed: Messrs. K. W. B. Davies, Honorary Secretary; E. H. Norman, Honorary Assistant Secretary; P. E. Davis, Honorary Treasurer; C. Evans, Honorary Assistant Treasurer; J. W. P. Cowell, Honorary Librarian; R. A. Savill, Chairman.

London Transport Metropolitan Line Service.—On June 5 there will be a considerable improvement in the London Transport Metropolitan Line service to Uxbridge. Seven new and additional fast trains are to be run in the morning and evening peaks between Uxbridge, Baker Street, and the City. The trains will run non-stop between Finchley Road and Eastcote; present Uxbridge line trains run non-stop only between Wembley Park and Finchley Road. The improvement in service follows rearrangement of tracks between Wembley and Harrow, complete re-signalling of the line between Harrow and Uxbridge, and deliveries of new rolling stock. District Line services also are being progressively improved by the lengthening of further trains to eight cars.

Forthcoming Meetings

- May 22 (Mon.).—Indian State Railways Dinner and Ladies' Tea, at the Rembrandt Hotel, Thurloe Place, London, S.W.7. Ladies' tea from 4 to 6 p.m. Dinner at 7 for 7.30 p.m.; Chairman: Sir Leonard Wilson, a former Chief Commissioner of Railways; Principal Guest, Sir Edward Benthall, lately Member for War Transport, Government of India.
- May 23 (Tue.).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, at 5.30 p.m. Annual general meeting.
- May 25 (Thu.).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. Annual general meeting for corporate members and associates only.

Railway Stock Market

With the notable exception of British Funds, which have rallied as a result of the success of the £150,000,000 British Electricity issue, stock markets have remained uncertain, especially in the industrial section, where sentiment has been affected by indications that rising costs will bear even more heavily on profits this year. Annual statements of leading industrial companies prominent in export markets emphasise the rising trend of costs and the higher prices that have to be paid for raw material imports. Lower profit margins mean increased competition in many industries owing to efforts to expand turnover so as to lessen the effects on profits of higher costs.

There was again a fair amount of activity in foreign rails, although on balance, movements were mostly against holders, profit taking developing on any improvement in prices. United of Havana stocks remained prominent on the persistent reports that representatives will soon be visiting London to complete take-over negotiations. After being close on 28, however, the 1907 debentures came back to 26½, awaiting developments. The 4 per cent. debentures were 17, the 4½ per cent. Cuban Central debentures 55, and Havana Terminal 5 per cent. debentures 95. Elsewhere there was rather more business around 71 reported in La Guaira Caracas, and the 5 per cent. debentures were 82½. Taltal shares changed hands around 18s. 6d. Dorada Rail stock was 64½, Guayaquil & Quito 5 per cent. bonds 25, and International of Central America no par shares \$15½.

Nitrate Rails showed firmness at 72s. 6d., and Antofagasta was steady at 7½ with the preference 42. Canadian Pacific eased with dollar stocks, receding to 28½; the preference stock was steady at 66½, and the 4 per cent. debentures have firmed up to 96½.

Leopoldina stocks reflected a fair amount of profit taking, although take-over levels are above current market prices. During the past twelve months various stocks were purchased below current levels, and some holders have decided not to await the pay-out, preferring to reinvest in other stocks with speculative possibilities. Some switching into United of Havana is reported.

Leopoldina ordinary has eased to 9½, the preference stock to 25½, and the 4 per cent. debentures to 93½, while the 6½ per cent. debentures were 135½. Leopoldina Terminal debentures were 89½, and the ordinary units changed hands around 1s. 7½d.

Great Western of Brazil failed to hold an earlier improvement, easing to 145½, although it continues to be expected that the pay-out will amount to at least 135s. a share.

In other directions, Manila "A" debentures were 86, and the preference shares 8s. 4½d. San Paulo has been more active, but at 16s. 6d., these 10s. units failed to hold best levels. Central Uruguay ordinary was quoted at 10. Firmness was shown by French railway sterling bonds, sentiment being helped by the suggested Franco-German steel-coal collaboration plan. Mexican rails remained active, but fluctuated, and Mexican Central "A" bonds eased to 37.

Road transport shares remained firmly held, and in many cases the amount of business was insufficient to test prices. Among the more active shares, however, Southdown have receded to 117s. 7d., and West Riding to 58s. Lancashire Transport were 78s., but B.E.T. deferred stock was firmer at 42s.

Iron and steels lost a small part of recent gains, sentiment being affected to some extent by a tendency to await any further development that might arise from the Franco-German steel-coal plan. Stewarts and Lloyds at 54s. 1½d., and Guest Keen at 44s. 3d., remained under the influence of the excellent impression created by the annual results, although best prices were not held by the shares. Colvilles were 33s. 1½d., but have also not held best prices, despite the good results. United Steel were 25s. 3d. Tube Investments strengthened and changed hands up to £6.

Recent gains were mostly held by locomotive building and engineering shares, news of more overseas contracts having emphasised that the industry will remain well occupied for a long time to come. Vulcan Foundry kept at 20s., Beyer Peacock were 20s. 10½d., North British Locomotive eased to 17s. 3d., and Wagon Repairs 5s. shares were 16s. 9d. Birmingham Carriage were 28s. 9d., Hurst Nelson 57s., and Gloucester Wagon 48s.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1947/48		Total	Increase or decrease		
							1948/49			
South & Central America	Antofagasta ...	811	7.5.50	£ 60,140	—	£ 6,130	18	£ 1,089,884	—	£ 126,440
	Costa Rica ...	281	Mar., 1950	c991,660	—	c106,988	39	c7,596,462	—	c1,523,421
	Dorada ...	70	Mar., 1950	48,466	+	17,609	13	126,471	+	35,901
	Inter. Ctl. Amer. ...	794	Mar., 1950	\$1,310,388	+	\$114,029	13	\$3,778,654	+	\$493,309
	La Guaira ...	223	Apr., 1950	881,912	+	840,809	17	\$345,161	—	\$107,313
	Nitrate ...	382	30.4.50	16,483	+	876	17	159,578	+	20,352
	Paraguay Cent. ...	274	28.4.50	£180,560	+	£80,910	43	£6,282,336	+	£1,818,452
	Peru Corp. ...	1,050	Apr., 1950	\$4,263,000	—	\$461,658	43	\$57,660,059	+	\$16,899,941
	" (Bolivian Section)	66	Apr., 1950	Bs. 10,165,000	+	Bs. 1,158,770	43	Bs. 97,511,664	+	Bs. 11,761,937
	Salvador ...	100	Febr., 1950	c239,000	—	c72,000	35	c1,300,000	—	c139,000
Taltal ...	154	Apr., 1950	18,280	+	10,365	43	138,920	+	50,665	
Canada	Canadian National [*]	23,473	Mar., 1950	14,955,000	+	1,143,000	13	38,830,000	+	341,000
	Canadian Pacific [*]	17,037	Mar., 1950	10,743,000	+	446,000	13	27,726,000	—	793,000
Various	Barsi Light [*]	167	Mar., 1950	34,522	+	3,022	52	358,762	+	22,275
	Egyptian Delta ...	607	20.3.50	17,981	—	329	51	663,540	—	43,842
	Gold Coast ...	536	Feb., 1950	234,159	—	6,199	48	2,547,700	+	163,306
	Mid. of W. Australia	277	Mar., 1950	33,778	+	3,481	39	275,873	+	15,568
	Nigeria ...	1,900	Jan., 1950	502,360	+	38,978	44	5,017,814	+	266,573
	South Africa ...	13,347	22.4.50	1,607,872	+	216,069	3	4,835,856	+	368,509
	Victoria ...	4,744	Jan., 1950	2,000,259	+	490,658	31	—	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at 83 to £1